



Whole-Rock and Sulfide-Mineral Geochemical Data for Samples from Volcanogenic Massive Sulfide Deposits of the Bonnifield District, East-Central Alaska

By Cynthia Dusel-Bacon, John F. Slack, Alan E. Koenig, Nora K. Foley, Robert L. Oscarson,
and Kathleen D. Gans

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Introduction

This Open-File Report presents geochemical data for outcrop and drill-core samples from volcanogenic massive sulfide deposits and associated metagneous and metasedimentary rocks in the Wood River area of the Bonnifield mining district, northern Alaska Range, east-central Alaska. The data consist of major- and trace-element whole-rock geochemical analyses and major- and trace-element analyses of sulfide minerals determined by electron microprobe and laser ablation–inductively coupled plasma–mass spectrometry (LA-ICP-MS) techniques. The text and tables in this report are available online at <http://pubs.usgs.gov/of/2011/1171/>. The PDF consists of text, appendix explaining the analytical methods used for the analyses presented in the data tables, a sample location map, and seven data tables. The seven tables are also available as spreadsheets in several file formats. Descriptions and discussions of the Bonnifield deposits are given in Dusel-Bacon and others (2004, 2005, 2006, 2007, 2010).

Contents of This Open-File Publication

- Text
- Appendix describing analytical methods
- Sample Location Map. Locations for samples from the Bonnifield district, Alaska, whose analyses are given in tables 1-7
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Table 1. Whole-rock geochemical analyses from Activation Laboratories, Ancaster, Ontario, Canada, of mineralized and associated unmineralized samples, Bonnifield district, Alaska.

Table 2. Whole-rock metal contents for Bonnifield samples in which Zn, Pb, or Cu are >1,000 ppm or Ag content is >20 ppm.

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Appendix

Analytical Methods

Whole-rock geochemical analyses by Activation Laboratories (data labeled “ACT Lab” in tables 1 and 2).

Analyses were made by Activation Laboratories, Ancaster, Ontario, Canada. Samples for geochemical analysis were trimmed of weathered surfaces and veins and then pulverized in an alumina-ceramic mortar. Major, selected trace, and rare earth elements (REE) were determined by inductively coupled plasma-mass spectrometry (ICP-MS) on rock powders fused with lithium metaborate/tetraborate in order to insure complete acid dissolution of minerals such as zircon, monazite, xenotime, and barite prior to analysis. F was analyzed by fusion ion selective electrode. Instrumental neutron activation analysis (INAA) was used for As, Sb, Sc, and Cr. Data for Li, B, Ga, Co, Cd, Au, Pb, Mo, Re, Te, and Se were acquired by a multi-acid digestion of powders followed by ultratrace ICP-MS analysis, which has higher precisions and lower detection limits than the fusion ICP-MS method. Analyses were obtained on duplicate samples and 8 to 12 standards. Details of the various analytical methods, including accuracy and precision, are available at www.actlabs.com. In order to evaluate comparability of the data we acquired from different laboratories, three samples (97ADb58d1, 97ADb59e, and 97ADb61a) were submitted to both Activation and Chemex laboratories for independent analysis; all results are similar.

Whole-rock geochemical analyses by Chemex Laboratories (data labeled “Chemex” in tables 2 and 3).

Analyses were made by Chemex Labs, Vancouver, B.C., Canada. Rocks were pulverized using a tungsten carbide ring mill; clean silica sand was run between each sample during pulverization. Analytical methods used: Oxides, wavelength-dispersive X-ray fluorescence (XRF); Total sulfur and total carbon, Leco furnace (Leco-Ir detector); inorganic carbon, Leco furnace (Leco-gasometric); Au, Pt, and Pd, Fire Assay (FA) inductively coupled-plasma (ICP); all other trace elements (except Ba) with values in ppm or ppb were done by ICP-atomic emission spectrometry (AES) Nitric-Aqua-Regia-leach. Ag in oz/T analyzed by FA gravimetric. Pb and Zn reported in % analyzed by Concentrated Nitric-HCl digestion by AAS. Ba reported in ppm and % analyzed by XRF. In order to evaluate comparability of the data we acquired from different laboratories, three samples (97ADb58d1, 97ADb59e, and 97ADb61a) were submitted to both Chemex and Activation laboratories for independent analysis; all results are similar.

Electron microprobe analyses (data presented in tables 5 and 6).

Electron microprobe analyses were conducted at the USGS in Menlo Park, California (tables 5 and 6), and Reston, Virginia. Concentrations of 12 elements (Cu, Pb, As, Fe, S, Zn, Cd, Se, Mn, Ag, Co, and Ni) were determined for all samples, as well as Sb, Hg, and Sn for most, by wavelength-dispersion analysis using a JEOL 8900 Superprobe equipped with five spectrometers. Operating conditions were a 15kv accelerating voltage, 30nA beam current, focused beam, and 20 s counting period on peaks and backgrounds per analysis. Mineral standards included natural pyrite for calibration of Fe and S; chalcopyrite for Cu and S; galena for Pb; synthetic ZnS for Zn; CdS for Cd; elemental Se for Se; Mn₂O₃ for Mn; Ag₂S for Ag;

skutterudite for As and Co; pentlandite for Ni; stibnite for Sb; cinnabar for Hg; and cassiterite for Sn. X-ray intensities were converted to concentrations using a ZAF correction.

Laser ablation–inductively coupled plasma–mass spectrometry (LA-ICP-MS) analyses of sphalerite and pyrite (data presented in table 7).

Laser ablation–inductively coupled plasma–mass spectrometry (LA-ICP-MS) analyses of sphalerite and pyrite were collected at the Denver, CO, USGS facility using a CETAC Technologies LSX-500 LA system (266 nm) coupled to a PerkinElmer ELAN6000. Typical operating conditions for both were similar (spot size = 25 μ m, 50 μ m; pulse frequency = 2 Hz; energy density = ~5 J/cm², RF power = 1400 W, 1260 W; He carrier gas flow = 0.8–0.95 l/min; Ar gas flow = 0.7–1.0 l/min). Signals were calibrated using the U.S. Geological Survey reference material MASS-1 (Wilson and others, 2002); the reference material was analyzed 3–5 times at each analytical condition at the start of an analytical session and monitored throughout for drift. Concentrations were determined using off-line calculations following the protocol of Longerich and others (1996). Iron and Zn (for pyrite and sphalerite, respectively) were used as the internal standard for concentration calculations. Heterogeneities such as mineral inclusions or zoning were screened by noting changes in signal coupled with petrographic analysis. Errors in determinations result from the necessity of assuming stoichiometric values for sulfide, incomplete removal of mineral inclusions from the integrated spectra, and the homogeneity of the reference material with respect to each element (Wilson and others, 2002).

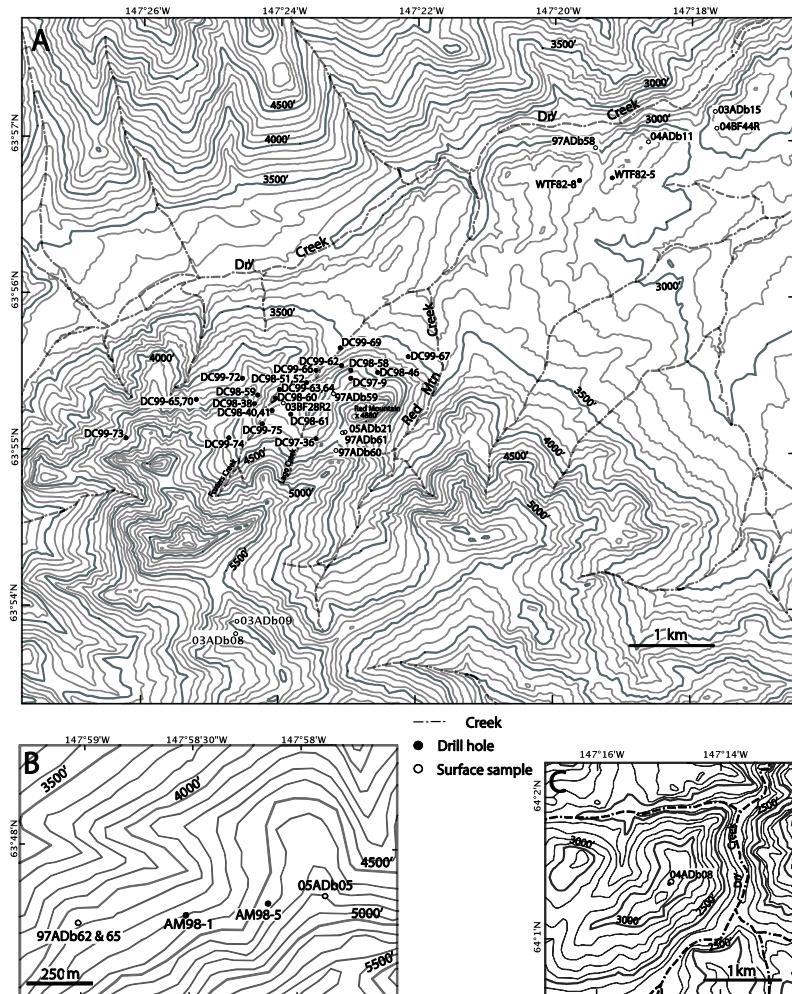


Figure 1. Sample Location Map. Locations for samples from the Bonnifield district, Alaska, whose analyses are given in tables 1-7. A, Area of Dry Creek and WTF deposits (Healy D-1 quadrangle). B,

Table 1. Whole-rock geochemical analyses from Activation Laboratories, Ancaster, Ontario, Canada, of mineralized and associated unmineralized argillite, Bonnifield district, Alaska.

[Analytical methods described in Appendix. Abbreviations: AM = Anderson Mountain, Ck = Creek, cp = chalcopyrite, gn = galena, MS = massive sulfide, py = pyrite, sl = sphalerite; WTF = West Tundra Flats. Sample locations shown on Sample Location Map]

Sample	97ADb61a	05ADb21	03ADb08	97ADb59e	DC98-38-237	DC98-41-229	DC98-40-41
Setting	DC South	Red Mountain summit	South of Dry Ck deposit (Keevy Peak Fm)	Discovery Zone	Fosters Ck zone	Fosters Ck zone	Fosters Ck zone
Lithology	siliceous MS; major sl	quartz-muscovite schist; minor py	gray phyllite	MS; major sl & gn; minor cp & gold	gray pyritic argillite with felsic clasts; minor py & sl	gray graphitic argillite; minor sl	gray argillite/phyllite
Wt. %							
SiO ₂	61.64	75.03	78.25	18.08	66.18	74.45	77.09
Al ₂ O ₃	3.86	7.98	10.84	0.08	14.97	9.72	7.87
Fe ₂ O ₃ ^T	10.44	3.51	2.88	4.38	4.11	2.83	4.13
MnO	0.115	0.003	0.009	0.005	0.022	0.01	0.033
MgO	2.51	0.05	1.29	< 0.01	1.23	1.1	2.28
CaO	0.02	0.03	0.1	0.03	0.64	0.39	0.05
Na ₂ O	0.05	0.17	0.71	< 0.01	5.05	2.79	3.14
K ₂ O	0.37	6.89	2.61	0.12	1.47	2.81	1.82
TiO ₂	0.088	0.244	0.493	< 0.001	0.472	0.338	0.343
P ₂ O ₅	0.02	0.04	0.11	< 0.01	0.41	0.29	0.08
LOI	7.55	1.78	2.57	18.69	4.76	4.5	3.09
Total	86.65	95.72	99.85	41.26	99.31	99.22	99.92
Total C	0.13	0.04	0.26	0.38	0.48	1.29	0.21
Graphitic C	< 0.05	< 0.05	0.23	0.09	0.42	1.17	0.22
Organic C	< 0.05	< 0.05	0.05	0.19	0.05	0.12	< 0.05
TOC	< 0.05	< 0.05	0.28	0.28	0.47	1.29	0.22
CO ₂	0.24	0.05	< 0.05	0.05	< 0.05	< 0.05	< 0.05
S	8.47	1.43	0.12	28.4	2.5	1.61	0.92
SO ₄	0.16	< 0.05	0.09	4.62	0.29	0.27	0.21
F	0.11	< 0.01	0.07	0.04	0.10	0.14	0.16
ppm							
Br	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Be	< 1	< 1	2	< 1	5	5	4
V	< 5	< 5	179	< 5	444	603	47
Sc	0.5	1	12	0.4	6	4	5
Ga	16	15	16	13	35	22	16
Ge	1.2	0.9	1.7	< 0.5	2.1	0.9	2.2
Rb	12	153	116	1	64	130	88
Sr	< 2	19	49	2	54	22	7
Cr	33	70	60	< 5	64	77	26
Zr	240	782	111	< 4	511	441	332
Hf	6	17.6	2.8	< 0.1	19.1	13.0	10.5
Nb	34.7	93.8	12.6	0.7	158.8	72.1	52.1
Ta	2.13	7.40	0.88	0.02	7.73	5.88	3.66
Co	4	3	< 1	3	6	8	6
Ni	2	4	34	31	90	111	26
Cu	1880	58	22	1250	38	64	36
Zn	66700	1020	66	300000	4147	1077	158
Cd	326	12	< 0.3	1720	34	10	1
Pb	4140	1230	12	153000	53	31	20
Sb	16.1	7.8	1.5	307	29.7	16.4	10
As	46.8	191	7.1	243	101	69.7	31.3
Bi	171	22.30	1.55	45.9	2.07	0.11	1.54

Table 1 (continued). Whole-rock geochemical analyses from Activation Laboratories, Ancaster, Ontario, Canada, of mineralized and associated unmineralized argillite, Bonnifield district, Alaska.

Sample	97ADb61a	05ADb21	03ADb08	97ADb59e	DC98-38-237	DC98-41-229	DC98-40-41
Tl	0.18	3.32	1.17	2.05	7.40	4.30	6.85
Mo	5	24	<1	11	30	41	<1
Se	12	< 3	<3	17	7.5	7.5	<3
Ag	10	4.0	<0.3	323	1.3	1.3	0.8
Au ppb	68	9	<2	3460	<2	<2	<2
Hg ppb	10100	446		33000			
Ir ppb	< 5	< 5	5	< 5	<5	<5	<5
In	0.5	0.20	<0.1	3.7	0.36	<0.1	<0.1
Sn	7	10.00	<1	25	10.12	3.61	4.23
W	1.9	2.40	0.95	4.4	3.75	7.52	2.74
Cs	0.3	0.50	4.63	< 0.1	5.76	8.21	6.33
Ba	76	1003.00	1420.00	24	942.46	888.13	307.10
Y	36.7	99.30	13.99	< 0.5	81.30	64.58	45.87
La	85.4	63.80	30.69	7.35	147.76	50.68	17.08
Ce	158	125.00	52.64	8.6	260.41	115.63	30.24
Pr	16.9	14.30	6.24	0.57	30.96	15.21	3.52
Nd	56.6	59.70	22.90	1.44	116.36	61.70	13.22
Sm	8.74	15.30	4.10	0.21	24.69	13.89	3.44
Eu	0.529	1.21	0.73	0.025	1.67	1.15	0.43
Gd	7.11	16.40	3.25	0.07	21.86	12.96	4.64
Tb	1.25	3.04	0.45	0.01	3.48	2.39	1.15
Dy	7.13	19.00	2.51	0.08	17.45	12.71	7.39
Ho	1.39	3.80	0.48	0.01	3.10	2.36	1.63
Er	3.85	11.20	1.57	0.03	9.28	7.31	5.88
Tm	0.535	1.79	0.24	< 0.005	1.32	1.12	1.01
Yb	3.05	11.80	1.57	0.02	7.20	6.57	6.62
Lu	0.412	1.69	0.23	0.003	0.94	0.92	0.99
Th	6.26	19.00	8.75	0.23	28.33	18.50	14.30
U	2.24	11.90	2.65	0.15	27.78	24.38	5.41

Table 1 (continued). Whole-rock geochemical analyses from Activation Laboratories, Ancaster, Ontario, Canada, of mineralized and associated unmineralized argillite, Bonnifield district, Alaska.

Sample	DC98-52-538	97ADb58d1	WTF82-5-278.0	WTF82-5-278.4	WTF82-5-365	WTF82-5-366	WTF82-8-436
Setting	Lago Ck zone	WTF	WTF	WTF	WTF	WTF	WTF
Lithology	gray graphitic argillite with felsic clasts; minor py & sl	siliceous MS; major py & sl; minor gn	gray argillite	gray argillite; minor py	gray dolomitic(?) argillite; felsic clasts	gray graphitic argillite; minor py	gray graphitic argillite
Wt. %							
SiO ₂	69.93	67.23	62.29	64.53	74.16	77.4	62.97
Al ₂ O ₃	11.1	1.51	14.9	14.36	10.4	6.4	16.25
Fe ₂ O ₃ ^T	2.81	12.99	4.76	4.96	2.39	2.92	5.19
MnO	0.015	0.056	0.05	0.069	0.016	0.009	0.02
MgO	1.26	0.96	2.46	2.94	1.38	0.8	2.91
CaO	0.53	0.28	0.32	0.29	0.8	1.3	0.34
Na ₂ O	3.22	0.06	3.28	3.19	2.84	3.26	2.77
K ₂ O	4.01	0.13	5.35	4.92	1.96	1.92	4.02
TiO ₂	0.425	0.064	0.729	0.686	0.247	0.188	0.783
P ₂ O ₅	0.41	0.18	0.24	0.21	0.15	0.78	0.23
LOI	5.82	7.94	4.43	3.95	5.47	5.23	4.52
Total	99.55	91.4	98.8	100.1	99.81	100.2	99.99
Total C	2.5	0.06	0.33	0.28	0.72	2.13	0.44
Graphitic C	2.17	< 0.05	0.3	0.26	0.3	1.81	0.43
Organic C	0.37	< 0.05	0.05	< 0.05	< 0.05	0.15	< 0.05
TOC	2.54	< 0.05	0.35	0.26	0.3	1.96	0.43
CO ₂	< 0.05	0.05	< 0.05	< 0.05	1.39	0.62	< 0.05
S	1.1	7.37	1.39	0.63	0.73	2.1	0.47
SO ₄	0.21	0.16	0.14	0.17	0.13	0.29	0.1
F	0.18	0.03	0.13	0.12	0.13	0.17	0.11
ppm							
Br	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Be	9	< 1	2	2	7	5	3
V	1180	46	219	190	24	133	233
Sc	7	1.4	13	13	< 1	5	14
Ga	24	3	22	21	36	15	24
Ge	1.1	0.6	1.3	1.4	1.7	< 0.5	1.7
Rb	178	6	189	184	87	82	162
Sr	27	6	41	36	137	142	41
Cr	177	44	87	81	15	56	93
Zr	390	22	148	136	1490	252	150
Hf	13.6	0.6	4.7	4.1	42.8	7.3	4.5
Nb	74.2	1.9	18.7	16.4	220.6	41.9	20.3
Ta	6.56	0.14	1.20	1.16	15.55	2.74	1.28
Co	24	25	18	15	< 1	3	13
Ni	153	7	66	58	10	63	55
Cu	58	1020	54	24	14	41	39
Zn	2607	58700	439	138	163	307	173
Cd	21	425	2	1	1	2	1
Pb	111	7820	46	11	23	19	12
Sb	20.4	17.1	6.3	4.2	3.2	9.7	2.4
As	112	287	20.6	14.9	9.3	47.4	11
Bi	< 0.1	6.20	1.58	1.47	2.52	< 0.1	1.20

Table 1 (continued). Whole-rock geochemical analyses from Activation Laboratories, Ancaster, Ontario, Canada, of mineralized and associated unmineralized argillite, Bonnifield district, Alaska.

Sample	DC98-52-538	97ADb58d1	WTF82-5- 278.0	WTF82-5-278.4	WTF82-5-365	WTF82-5-366	WTF82-8-436
Tl	2.80	0.12	2.53	2.69	2.42	1.44	1.91
Mo	48	3	2	4	<1	25	<1
Se	12	17	<3	<3	<3	7	<3
Ag	1.4	7.0	<0.3	<0.3	1.9	1.9	<0.3
Au ppb	9	340	4	<2	<2	<2	<2
Hg ppb		2500					
Ir ppb	<5	< 5	<5	<5	<5	<5	<5
In	<0.1	0.30	<0.1	<0.1	0.18	<0.1	<0.1
Sn	3.79	3.00	1.74	1.80	13.95	1.42	2.32
W	8.34	0.90	2.53	2.96	1.70	1.39	1.71
Cs	10.46	0.40	5.48	5.37	4.83	4.26	4.72
Ba	1470.00	248.00	3900.00	3680.00	6200.00	6050.00	2790.00
Y	66.02	6.60	24.31	22.62	163.14	49.19	22.53
La	143.63	7.08	45.37	40.48	198.76	42.44	48.78
Ce	236.89	12.00	78.08	67.49	365.36	70.11	84.21
Pr	28.22	1.42	9.32	7.84	43.17	8.32	9.92
Nd	100.82	4.94	35.15	28.79	162.50	31.60	36.50
Sm	18.91	1.07	6.43	5.33	34.96	6.96	6.65
Eu	1.76	0.19	1.28	1.21	1.82	0.85	1.29
Gd	15.56	0.91	5.42	4.70	32.09	7.19	5.47
Tb	2.34	0.15	0.86	0.77	6.00	1.35	0.84
Dy	11.75	0.91	4.50	4.10	33.30	7.71	4.28
Ho	2.25	0.20	0.87	0.82	6.54	1.57	0.82
Er	7.14	0.63	2.69	2.66	21.06	4.89	2.58
Tm	1.04	0.11	0.42	0.39	3.24	0.74	0.40
Yb	6.16	0.71	2.66	2.51	19.18	4.43	2.49
Lu	0.90	0.11	0.38	0.36	2.62	0.64	0.38
Th	24.50	1.35	13.20	12.32	47.37	12.65	13.83
U	17.97	1.39	4.13	3.87	12.94	7.65	4.09

Table 1 (continued). Whole-rock geochemical analyses from Activation Laboratories, Ancaster, Ontario, Canada, of mineralized and associated unmineralized argillite, Bonnifield district, Alaska.

Sample	WTF82-8-449	04ADb08	97ADb62	97ADb65b	05ADb05b
Setting	WTF	North of WFT (Mystic Ck Mbr.?)	AM	AM	AM
Lithology	gray graphitic argillite; minor py	gray phyllite	MS; major py, sl & cp; minor gn	MS; major sl & gn; minor cp	dolomitic MS; major py & cp
Wt. %					
SiO ₂	66.04	72.33	16.1	20.01	22.88
Al ₂ O ₃	12.7	11.98	0.43	0.23	10.15
Fe ₂ O ₃ ^T	5.75	2.58	46.12	14.19	28.72
MnO	0.064	0.02	0.057	0.075	0.283
MgO	2.82	1.85	0.65	0.38	10.89
CaO	0.26	0.09	0.05	0.05	4.2
Na ₂ O	3.26	3.26	0.1	0.09	0.21
K ₂ O	3.96	3.55	0.04	0.04	0.31
TiO ₂	0.843	0.54	0.013	0.014	0.498
P ₂ O ₅	0.2	0.19	< 0.01	< 0.01	0.12
LOI	4.1	3.59	23.79	15.54	17.47
Total	99.99	99.98	87.35	50.61	95.73
Total C	0.53	0.52	0.66	0.55	3.56
Graphitic C	0.5	0.47	< 0.05	< 0.05	< 0.05
Organic C	<0.05	<0.05	< 0.05	< 0.05	< 0.05
TOC	0.5	0.47	<0.05	<0.05	<0.05
CO ₂	<0.05	0.07	2.04	1.63	13.6
S	1.07	0.13	39.6	27.6	8.33
SO ₄	0.13	0.10	0.08	2.84	9.53
F	0.11	0.08	< 0.01	< 0.01	0.16
ppm					
Br	<0.5	<0.5	< 0.5	< 0.5	< 0.5
Be	2	3	< 1	< 1	< 1
V	309	261	19	6	29
Sc	12		0.8	0.6	13.7
Ga	19	18	12	14	14
Ge	1.3	1.4	0.7	0.7	< 0.5
Rb	151	149	2	< 1	9
Sr	31	17	5	3	98
Cr	65	58	< 5	< 5	10
Zr	133	110	8	8	268
Hf	3.8	3.2	0.2	0.2	7.1
Nb	20.1	12.5	1.0	0.7	17.3
Ta	1.28	0.88	0.05	0.57	1.30
Co	17	<1	64	16	28
Ni	76	28	69	67	5
Cu	11	33	37500	5620	11100
Zn	72	40	83800	321000	4720
Cd	1	0.6	273	980	14
Pb	19	10	11300	88800	3100
Sb	3.1	4.2	96.3	516	40.5
As	23.3	19.5	1350	953	78.3
Bi	2.95	0.6	2250	869	198

Table 1 (continued). Whole-rock geochemical analyses from Activation Laboratories, Ancaster, Ontario, Canada, of mineralized and associated unmineralized argillite, Bonnifield district, Alaska.

Sample	WTF82-8-449	04ADb08	97ADb62	97ADb65b	05ADb05b
Tl	1.71	1.53	1.2	9.52	0.23
Mo	7	<1	21	39	2
Se	<3	<3	111	104	25
Ag	<0.3	0.4	76.7	151	9.4
Au ppb	<2	12	365	474	20
Hg ppb			33600	94100	1780
Ir ppb	<5	<5	< 5	< 5	< 5
In	<0.1	<0.1	5.60	3.70	1.30
Sn	1.72	2	171.00	422.00	17.00
W	2.73	1.1	1.10	2.00	5.50
Cs	3.80	2.5	< 0.1	0.20	0.70
Ba	4420.00	2500	18.00	11.00	78.00
Y	20.79	17.1	1.80	1.30	38.50
La	23.81	34.4	1.14	0.77	43.70
Ce	41.18	56.9	2.27	1.50	89.70
Pr	5.03	6.80	0.25	0.17	10.50
Nd	19.28	25.1	1.00	0.67	40.30
Sm	4.11	4.59	0.24	0.16	8.27
Eu	1.01	0.9840	0.05	0.03	1.18
Gd	4.10	3.72	0.31	0.22	7.80
Tb	0.68	0.60	0.06	0.04	1.41
Dy	3.59	3.04	0.35	0.23	7.79
Ho	0.69	0.59	0.07	0.04	1.42
Er	2.17	1.90	0.19	0.13	4.02
Tm	0.32	0.286	0.03	0.02	0.61
Yb	2.12	1.81	0.17	0.11	3.65
Lu	0.31	0.274	0.03	0.02	0.50
Th	10.12	9.84	0.40	0.34	15.50
U	5.60	4.58	1.06	4.07	3.35

Table 2. Whole-rock metal contents for Bonnifield samples in which Zn, Pb, or Cu are >1,000 ppm or Ag content is >20 ppm

["Grayd Res." = data provided by Hans Smit of Grayd Resource Corp.; samples with a DC98 prefix were analyzed by Acme Laboratories and those with a DC99 prefix were analysed by Chemex Laboratories, both in Vancouver, B.C., Canada. Methods of analysis for Grayd samples: those analyzed by Acme Labs used aqua regia digestion with ICP-MS instrumentation; those analyzed by Chemex used aqua regia digestion with an ICP-AES scan or AAS for % Pb or Zn, and Ag reported in oz/T was determined by FA-gravimetric. "Chemex" = samples submitted by C. Dusel-Bacon to Chemex Laboratories, and "ACT" = samples submitted by J.F. Slack to Activation Laboratories; methods of analysis for those samples are given in Appendix. AM = Anderson Mountain deposit; Ck = Creek; DC = Dry Creek deposit; Disc. = Discovery zone; E = east; Fosters = Fosters Creek zone; N = north; W = west; and WTF = West Tundra Flats deposit. All zones are in the Dry Creek deposit. Sample locations shown on Sample Location Map. Blank cells indicate that no analysis was made for that element]

Sample	Source	From (ft)	To (ft)	Deposit or Zone	Sb (ppm)	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)	Cd (ppm)	Hg (ppb)	Mn (ppm)	Sn (ppm)
DC98-52	Grayd Res.	313	343	Lago Ck	2	<5	<0.2	8	22	2780	6	1.5	3	950	
DC98-52	Grayd Res.	343	377.5	Lago Ck	6	<5	<0.2	32	10	5850	36	2	3	5380	
DC98-52	Grayd Res.	426	453	Lago Ck	26	320	62.4	471	7960	19,400	510	68	8790	215	
DC98-52	Grayd Res.	453	495.5	Lago Ck	14	65	14	1370	22600	45600	158	135.5	8800	325	
DC98-52	Grayd Res.	495.5	525	Lago Ck	8	45	5	40	588	3380	80	11	1850	85	
DC98-52	Grayd Res.	525	542	Lago Ck	4	<5	0.8	25	78	2180	92	3	310	245	
DC99-62	Grayd Res.	539	546.5	Fosters/Disc.	<2	<5	<0.2	3	6	1190	10	1	80	350	
DC99-62	Grayd Res.	593	614	Fosters/Disc.	10	120	3	30	1115	2600	188	4.5	2580	45	
DC99-62	Grayd Res.	614	636	Fosters/Disc.	<2	<5	0.4	18	56	1540	18	1.5	210	1810	
DC99-62	Grayd Res.	652	660.5	Fosters/Disc.	2	5	0.6	94	8	1050	26	<0.5	60	1810	
DC99-62	Grayd Res.	660.5	667	Fosters/Disc.	160	135	7363	656	7640	24600	614	70	15960	1495	
DC99-62	Grayd Res.	667	672	Fosters/Disc.	68	500	51.2	300	6440	21800	548	46.5	10080	360	
DC99-66	Grayd Res.	439	444	Fosters/Disc.	<2	5	<5	13	44	1665	6	3.5	<1	350	
DC99-66	Grayd Res.	519	524	Fosters/Disc.	<2	30	0.8	459	1235	5510	40	15.5	1	715	
DC99-66	Grayd Res.	529	534	Fosters/Disc.	<2	5	0.6	220	1285	7690	50	24	3	675	
DC99-66	Grayd Res.	534	538	Fosters/Disc.	<2	<5	<0.2	114	422	5550	16	16.5	1	1115	
DC99-66	Grayd Res.	538	541	Fosters/Disc.	12	25	3.2	82	274	4780	44	12.5	3	930	
DC99-66	Grayd Res.	541	544	Fosters/Disc.	256	200	154.1	620	6380	20300	370	39.5	18	275	
DC99-66	Grayd Res.	558	561.1	Fosters/Disc.	20	75	10	575	12100	28800	156	74.5	4	620	
DC99-66	Grayd Res.	561.1	564	Fosters/Disc.	2	25	3	700	7200	21800	42	23.5	1	4270	
DC99-66	Grayd Res.	564	567	Fosters/Disc.	2	5	1.2	497	4100	15800	14	37	1	950	
DC99-66	Grayd Res.	567	570	Fosters/Disc.	8	75	5.2	1150	10100	20000	28	41.5	<1	1905	
DC99-66	Grayd Res.	570	573	Fosters/Disc.	100	130	9.2	574	4800	12500	432	25	<1	550	
DC99-66	Grayd Res.	573	576	Fosters/Disc.	48	165	5.6	139	1200	7200	756	3.5	<1	1070	
DC99-66	Grayd Res.	576	579	Fosters/Disc.	60	95	6.8	157	80	4600	822	4.5	<1	370	
DC99-66	Grayd Res.	579	582	Fosters/Disc.	34	155	5.6	184	2100	8100	804	14	<1	665	
DC99-66	Grayd Res.	582	585	Fosters/Disc.	18	166	4.8	630	10000	28400	630	51	1	2590	
DC99-66	Grayd Res.	585	588	Fosters/Disc.	10	100	7.6	1290	18800	43500	126	119.5	1	205	
DC99-66	Grayd Res.	588	593	Fosters/Disc.	6	20	1.2	180	3840	7360	52	21.5	<1	45	
DC99-66	Grayd Res.	593	596	Fosters/Disc.	94	25	4.4	2390	12500	20600	68	53.5	<1	45	
DC99-66	Grayd Res.	596	599	Fosters/Disc.	52	10	3.6	2080	13400	80700	36	194	<1	55	
DC99-66	Grayd Res.	599	604	Fosters/Disc.	8	40	2.4	250	6700	15000	82	36	<1	55	
DC99-66	Grayd Res.	604	609	Fosters/Disc.	6	10	2.4	230	7930	14400	48	38	<1	75	
DC99-66	Grayd Res.	609	614	Fosters/Disc.	10	25	4	869	9640	20200	78	56.5	<1	135	
DC99-66	Grayd Res.	651	656	Fosters/Disc.	68	70	15.8	253	7070	9160	498	34.5	5	80	
DC99-66	Grayd Res.	656	661	Fosters/Disc.	74	80	15	149	3760	9520	506	31	5	35	
DC99-66	Grayd Res.	661	666	Fosters/Disc.	70	65	9.4	149	2100	3990	182	26.5	2	75	
DC99-66	Grayd Res.	666	671	Fosters/Disc.	34	40	8.4	68	2990	4960	152	16.5	3	45	
DC99-66	Grayd Res.	675	680.4	Fosters/Disc.	62	285	26.4	70	30	90	946	1.5	4	105	
DC98-59	Grayd Res.	330	336	Fosters	14	50	6.4	31	404	1040	750	3.5	5840	2390	
DC98-61	Grayd Res.	37	54	Fosters	<2	<5	<0.2	8	22	3070	14	5	<1	675	
DC98-61	Grayd Res.	54	90	Fosters	<2	<5	<0.2	99	10	6200	<2	18	<1	2670	
DC98-61	Grayd Res.	90	106	Fosters	<2	<5	<0.2	56	8	1585	2	3	<1	2320	
DC98-61	Grayd Res.	111	123	Fosters	<2	<5	<0.2	26	6	2130	10	5	<1	2140	
DC98-61	Grayd Res.	161	181.5	Fosters	8	<5	<0.2	6	30	2560	28	6	<1	340	
DC98-61	Grayd Res.	181.5	205	Fosters	<2	<5	<0.2	35	6	3830	<2	6	<1	1430	
DC98-61	Grayd Res.	205	230	Fosters	<2	<5	<0.2	60	2	2420	18	0.5	<1	1250	
DC98-61	Grayd Res.	230	239.5	Fosters	4	<5	<0.2	50	2	3370	<2	<0.5	1	1265	
DC98-61	Grayd Res.	239.5	259	Fosters	16	<5	1.2	24	60	3200	442	3.5	<1	690	
DC99-63	Grayd Res.	403.5	409	Fosters	10	100	5.2	163	2770	9260	228	29.5	5650	75	
DC99-63	Grayd Res.	434	439	Fosters	78	145	31.8	167	2900	6150	448	11.5	8170	330	
DC99-63	Grayd Res.	439	444	Fosters	316	220	167	537	4080	8830	454	20	9980	825	
DC99-63	Grayd Res.	444	449	Fosters	54	70	16	49	494	1485	1095	3.5	3550	1485	
DC99-63	Grayd Res.	454	459	Fosters	72	320	49	43	254	556	1635	0.5	21600	205	
DC99-63	Grayd Res.	459	464	Fosters	36	160	41.2	37	228	848	1125	2	1940	80	

Table 2 (continued). Whole-rock metal contents for Bonnifield samples in which Zn, Pb, or Cu are >1,000 ppm or Ag content is >20 ppm

Sample	Source	From (ft)	To (ft)	Deposit or Zone	Sb (ppm)	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)	Cd (ppm)	Hg (ppb)	Mn (ppm)	Sn (ppm)
DC99-63	Grayd Res.	464	469	Fosters	28	220	23.6	35	176	406	738	0	1410	255	
DC99-63	Grayd Res.	469	475	Fosters	28	85	8.8	482	>10000	>10000	310	53.5	4240	950	
DC99-64	Grayd Res.	401	406	Fosters	4	25	1.8	12	242	1095	108	2	680	480	
DC99-64	Grayd Res.	406	411	Fosters	8	0	1.4	16	1560	3900	18	13	2270	3270	
DC99-64	Grayd Res.	411	416	Fosters	30	0	0.6	71	900	>10000	0	46.5	7620	6000	
DC99-64	Grayd Res.	416	421	Fosters	38	0	3.6	78	7520	>10000	2	63.5	9530	2950	
DC99-64	Grayd Res.	421	426	Fosters	18	15	1.2	48	436	4060	40	11	2650	3760	
DC99-64	Grayd Res.	426	432	Fosters	96	240	12.4	515	>10000	>10000	576	70.5	9730	570	
DC99-64	Grayd Res.	432	443	Fosters	50	135	6.8	510	6690	>10000	614	44.5	3870	230	
DC99-64	Grayd Res.	443	446	Fosters	2	5	0.6	54	790	1600	34	3.5	460	130	
DC99-64	Grayd Res.	446	450	Fosters	<2	5	0.4	21	334	1005	30	2.5	420	100	
DC99-64	Grayd Res.	450	455	Fosters	74	65	9.8	563	8210	>10000	440	46	5120	65	
DC99-64	Grayd Res.	455	460	Fosters	30	100	2.6	81	534	1110	836	2.5	1130	60	
DC99-64	Grayd Res.	460	463	Fosters	40	215	10.2	100	706	1100	1225	2	1620	140	
DC99-64	Grayd Res.	463	463	Fosters	96	320	39.2	2110	>10000	>10000	594	140	11680	160	
DC99-64	Grayd Res.	463	482	Fosters	84	330	75.2	9280	>10000	>10000	564	500	39300	1295	
DC99-64	Grayd Res.	463	463	Fosters	76	335	24.8	1350	>10000	>10000	772	74.5	6430	155	
DC99-64	Grayd Res.	463	463	Fosters	166	440	32.2	905	7870	>10000	980	45	4500	155	
DC99-64	Grayd Res.	482	487	Fosters	10	30	7	1185	>10000	>10000	118	169	7950	95	
DC99-64	Grayd Res.	486	490	Fosters	8	20	3	512	8640	>10000	52	74	3890	80	
DC99-64	Grayd Res.	490	496	Fosters	10	40	2.6	323	4700	9280	66	27	4650	65	
DC98-58	Grayd Res.	330	379	Discovery	<2	<5	0.4	40	18	2060	<2	6	<1	515	
DC98-58	Grayd Res.	605	632	Discovery	14	<5	0.2	10	34	1180	92	1.5	<1	260	
DC98-58	Grayd Res.	663	694	Discovery	14	135	4	65	270	1790	252	2.5	<1	90	
DC99-75	Grayd Res.	450	469	DC South	<2	<5	0.8	203	1445	4200	34	12	<1	215	
DC99-75	Grayd Res.	495	532	DC South	<2	<5	0.2	50	576	1480	6	4.5	<1	180	
DC99-74	Grayd Res.	90	115	DC South	8	<5	0.6	183	1140	2200	12	8.5	<1	630	
DC99-74	Grayd Res.	115	118	DC South	<2	15	<0.2	77	574	1820	16	5.5	<1	320	
DC99-74	Grayd Res.	118	121	DC South	18	20	7.6	3360	16600	24000	34	71.5	4	240	
DC99-74	Grayd Res.	121	124	DC South	<2	<5	<0.2	384	1530	5920	16	21	<1	460	
DC99-74	Grayd Res.	124	142.5	DC South	<2	<5	0.8	343	1850	4800	10	14.5	<1	605	
DC99-74	Grayd Res.	142.5	156	DC South	6	<5	<0.2	66	1115	1840	16	5	<1	440	
DC99-74	Grayd Res.	199	219	DC South	6	<5	<0.2	14	90	1280	2	2	<1	590	
DC99-74	Grayd Res.	219	246	DC South	6	15	<0.2	29	220	1160	16	2	<1	515	
DC99-74	Grayd Res.	246	262	DC South	4	<5	0.4	11	378	1030	20	3	<1	85	
DC99-65	Grayd Res.	469	474	DC N (W)	18	190	10.2	160	3260	10000	344	38.5	2200	265	
DC99-65	Grayd Res.	474	478	DC N (W)	22	215	16.8	547	4250	10000	476	42.5	2790	190	
DC99-65	Grayd Res.	478	480.8	DC N (W)	6	55	1.4	98	172	4470	136	14.5	700	170	
DC99-65	Grayd Res.	497	500	DC N (W)	38	60	33.8	346	4490	10000	230	33.5	1800	930	
DC99-70	Grayd Res.	940	945	DC N (W)	28	120	18.8	82	1190	3020	664	11.5	<1	75	
DC99-70	Grayd Res.	945	950	DC N (W)	36	195	46.2	106	864	1990	228	6	<1	1075	
DC99-70	Grayd Res.	950	955	DC N (W)	12	690	3.6	65	1900	4400	90	15	1	1740	
DC99-70	Grayd Res.	955	960	DC N (W)	8	75	15.2	77	2460	5750	180	20	<1	675	
DC99-73	Grayd Res.	368.5	370	DC N (W)	162	50	123.3	1210	7380	23500	556	54	<1	460	
DC99-73	Grayd Res.	495	498	DC N (W)	8	60	7.8	79	1340	4560	170	10.5	5	20	
DC98-46	Grayd Res.	184	201	DC N (E)	2	25	1.2	1520	94	772	66	2.5	280	25	
DC98-46	Grayd Res.	201	257	DC N (E)	2	10	1	288	2850	3590	36	25.5	560	85	
DC99-67	Grayd Res.	515	540	DC N (E)	4	35	2.4	8950	166	564	108	6	<1	55	
DC99-67	Grayd Res.	575	582	DC N (E)	<2	<5	2.2	2140	36	316	32	0.5	<1	5	
DC99-67	Grayd Res.	582	590	DC N (E)	<2	<5	1.4	1590	480	4460	16	11	<1	25	
DC99-67	Grayd Res.	590	593	DC N (E)	<2	<5	1.4	292	60	4830	20	13	<1	45	
DC99-67	Grayd Res.	593	600	DC N (E)	<2	<5	1.8	372	216	9710	34	29	<1	80	
DC99-67	Grayd Res.	600	610	DC N (E)	2	<5	1	210	316	6070	50	18	<1	85	
DC99-67	Grayd Res.	610	620	DC N (E)	4	<5	1.2	185	1335	4550	64	14	<1	75	
DC99-67	Grayd Res.	620	631	DC N (E)	6	35	2.2	242	1570	>10000	152	32.5	<1	50	
DC99-67	Grayd Res.	636	683	DC N (E)	2	15	1.2	39	2420	5660	64	18	<1	20	
DC99-69	Grayd Res.	976	980	DC N	10	25	5.8	107	1925	5350	240	17	2	905	
DC99-69	Grayd Res.	980	984	DC N	40	10	13	296	3900	13600	476	52	5	195	
DC99-69	Grayd Res.	984	989	DC N	60	30	31.8	209	5290	15800	524	35	11	490	

Table 2 (continued). Whole-rock metal contents for Bonnifield samples in which Zn, Pb, or Cu are >1,000 ppm or Ag content is >20 ppm

Sample	Source	From (ft)	To (ft)	Deposit or Zone	Sb (ppm)	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)	Cd (ppm)	Hg (ppb)	Mn (ppm)	Sn (ppm)
DC99-69	Grayd Res.	989	1000	DC N	6	10	2.8	22	606	1790	150	5.5	1	420	
DC99-69	Grayd Res.	1000	1005	DC N	36	55	11.6	588	7240	37000	344	103.5	12	695	
DC99-69	Grayd Res.	1015	1039	DC N	<2	5	0.6	94	802	3820	56	10	<1	2320	
DC99-69	Grayd Res.	1039	1055	DC N	<2	5	0.2	41	946	2050	54	6	<1	30	
DC99-69	Grayd Res.	1055	1060	DC N	<2	<5	1.4	307	4180	6600	20	21	<1	25	
DC99-69	Grayd Res.	1060	1082	DC N	<2	<5	0.2	194	1125	3610	16	11	<1	60	
DC99-69	Grayd Res.	1082	1100	DC N	<2	15	0.8	13	50	1515	26	4	<1	245	
DC99-69	Grayd Res.	1100	1105	DC N	4	15	0.8	683	842	9410	84	32	<1	225	
DC99-69	Grayd Res.	1105	1138	DC N	2	5	0.8	8	56	1175	148	0.5	<1	535	
DC99-69	Grayd Res.	1138	1157	DC N	<2	<5	0.6	14	1720	2150	<2	6	<1	1440	
DC99-69	Grayd Res.	1157	1162	DC N	2	<5	1.2	1625	122	968	38	3	<1	20	
DC99-69	Grayd Res.	1195	1200	DC N	<2	5	4.6	720	4340	37400	28	118	<1	130	
DC99-69	Grayd Res.	1200	1204.5	DC N	2	15	4	369	6900	23900	58	76.5	<1	45	
DC99-69	Grayd Res.	1204.5	1209	DC N	42	45	4.6	161	5330	11900	126	29.5	<1	55	
DC99-69	Grayd Res.	1251	1281	DC N	2	5	<0.2	6	30	1135	2	<0.5	<1	125	
97ADb58b	Chemex			WTF		510				140000					
97ADb58d1	Chemex			WTF		330	8.6	1740	9440	62500		259		405	
97ADb58g	Chemex			WTF		300	8.4	1915	4410	64400		261		180	
97ADb59e	Chemex			Discovery		3590	311.99	789	168500	326000		500		65	
97ADb59h	Chemex			Discovery		5910	287.99		129000	310000					
97ADb61a	Chemex			DC South		20	7.8	1540	3570	47600		138		1205	
97ADb65b	Chemex			AM		460			106000	342000					
97ADb58d1	ACT Lab.			WTF	17.1	340	7	1020	7820	58700	287	425	2500	434	3
DC98-52-538	ACT Lab.			Lago Ck	20.4	9	1.4	58	111	2607	112	21.3		116	4
DC98-38-237	ACT Lab.			Fosters	29.7	0	1.3	38	53	4147	101	33.9		170	10
DC98-41-229	ACT Lab.			Fosters	16.4	0	1.3	64	31	1077	69.7	10.2		77	4
97ADb59e	ACT Lab.			Discovery	307	3460	323	1250	153000	300000	243	1720	33000	39	25
97ADb61a	ACT Lab.			DC South	16.1	68	10	1880	4140	66700	46.8	326	10100	891	7
05ADb21	ACT Lab.			DC South	7.8	9	4	58	1230	1020	191	12	446	23	10
97ADb62	ACT Lab.			AM	96.3	365	76.7	37500	11300	83800	1350	273	33600	441	171
97ADb65b	ACT Lab.			AM	516	474	151	5620	88800	321000	953	980	94100	581	422
05ADb05b	ACT Lab.			AM	40.5	20	9.4	11100	3100	4720	78.3	14	1780	2192	17

Table 3. Whole-rock geochemical analyses from Chemex Laboratories, Vancouver, B.C., Canada, of mineralized and associated unmineralized samples, Bonnifield district, Alaska.

[All analyses by Chemex Labs, Vancouver, B.C., Canada. Analytical methods described in Appendix. Abbreviations: AM = Anderson Mountain deposit; Ck = Creek; cp = chalcopyrite; DC = Dry Creek deposit; gn = galena; hydrotherm. alt. = hydrothermally altered; Mbr = Member (of Totatlanika Schist Formation); MS = massive sulfide; py = pyrite; sl = sphalerite; WTF = West Tundra Flats deposit. Sample locations shown on Sample Locality Map. Samples for which Pb or Zn contents were >10,000 ppm were reanalysed (see Appendix) and contents are reported in per cent]

Sample	97ADb58b	97ADb58d1	97ADb58f	97ADb58g	97ADb58h	03ADb15b	03ADb15c
Setting	WTF	WTF	WTF	WTF	WTF	WTF	WTF
Rock type and sulfides	MS; major py & sl	siliceous MS; major py & sl; minor gn	siliceous MS; major py & sl	siliceous MS; major sl & py; minor cp & gn	carbonaceous argillite	metarhyolite	metarhyolite
wt %							
SiO ₂	---	65.59	---	69.69	70.13	80.78	78.77
Al ₂ O ₃	---	1.76	---	0.92	13.54	9.05	10.61
TiO ₂	---	0.07	---	0.06	0.66	0.17	0.16
Fe ₂ O ₃	---	12.35	---	10.82	4.16	1.09	0.74
MnO	---	0.06	---	0.03	0.03	0.01	0.01
CaO	---	0.24	---	0.05	0.05	0.18	0.07
MgO	---	0.9	---	0.2	1.58	0.12	0.07
K ₂ O	---	0.17	---	0.19	3.97	3.27	3.9
Na ₂ O	---	0.02	---	0.01	0.06	2.62	3.08
P ₂ O ₅	---	0.19	---	0.07	0.15	0.04	0.04
Cr ₂ O ₃	---	<.01	---	<.01	<.01	0.01	<0.01
LOI	---	8.08	---	7.88	4.28	1.19	0.6
Total	---	89.43	---	89.92	98.61	98.53	98.05
S % Total	35.1	12	26.8	12	---	0.15	0.27
C % Total	---	---	---	---	0.61	---	---
C % inorganic	---	---	---	---	<.05	---	---
Ag ppm	---	8.6	---	8.4	0.4	0	0
Ag oz/T							
Au ppb	510	330	445	300	<5	<5	<5
Al %	---	0.82	---	0.44	6.95	4.82	5.38
As ppm	---	---	---	---	---	0	0
Ba ppm	---	70	---	20	3150	2540	4580
Be ppm	---	<.5	---	<.5	2	1.9	1.8
Bi ppm	---	4	---	6	<2	<2	<2
Ca %	---	0.13	---	0.03	0.03	0.13	0.05
Cd ppm	---	259	---	261	1.5	0	0
Co ppm	---	60	---	84	11	14	11
Cr ppm	---	17	---	12	84	3	8
Cu ppm	---	1740	---	1915	35	2	2
Fe %	---	8.37	---	7.5	2.63	0.74	0.5
K %	---	0.09	---	0.13	2.78	2.56	3.08
Mg %	---	0.57	---	0.18	0.91	0.1	0.06
Mn ppm	---	405	---	180	190	43	27
Mo ppm	---	<1	---	<1	3	<1	1
Na %	---	0.01	---	0.01	0.13	1.82	2.21
Ni ppm	---	5	---	5	21	<1	<1
P ppm	---	560	---	220	550	130	100
Pb ppm	---	9440	---	4410	52	14	10
Pb %							
Sb ppm	---	---	---	---	---	<5	<5
Sr ppm	---	5	---	4	21	98	112
Ti %	---	0.03	---	0.03	0.32	0.09	0.08
V ppm	---	47	---	30	194	8	3
W ppm	---	370	---	370	60	140	120
Zn ppm					166	11	38
Zn %	14	6.25		6.44			

Table 3 (continued). Whole-rock geochemical analyses from Chemex Laboratories, Vancouver, B.C., Canada, of mineralized and associated unmineralized samples, Bonnifield district, Alaska.

Sample	04ADb11a	04BF44R	97ADb59e	97ADb59h	03BF28R2	97ADb60a	97ADb60c	97ADb60f
Setting	WTF	WTF	Discovery zone	Discovery zone	Fosters Ck. Zone	DC South	DC South	DC South
Rock type and sulfides	metarhyolite	Fe-stained metarhyolite	MS; major sl & gn; minor cp & gold	MS; major sl & gn; minor gold	vuggy silica	quartz-eye metarhyolite	phyllitic quartz-eye metarhyolite	exhalite (?) with py
wt %								
SiO ₂	83.58	78.39	18.86	---	95.34	76.15	83.11	50.76
Al ₂ O ₃	9.41	10.1	0.14	---	0.47	10.29	5.89	4.14
TiO ₂	0.16	0.16	<.01	---	0.04	0.35	0.17	0.23
Fe ₂ O ₃	0.35	1.4	5.74	---	2.05	4.75	4.82	26.4
MnO	<0.01	0.01	<.01	---	0.02	0.01	0.01	<.01
CaO	0.04	0.16	0.07	---	0.14	0.02	0.01	0.01
MgO	0.07	0.06	0.02	---	0.24	0.78	0.22	0.34
K ₂ O	0.33	4.7	0.14	---	0.05	2.81	0.17	1.44
Na ₂ O	4.77	2.51	0.06	---	0.01	0.11	2.58	0.11
P ₂ O ₅	0.03	0.03	<.01	---	0.02	0.03	0.01	0.01
Cr ₂ O ₃	0.01	<0.01	<.01	---	<0.01	<.01	<.01	<.01
LOI	0.48	1.08	11.91	---	0.27	3.16	2.19	15.71
Total	99.23	98.6	36.94	---	98.65	98.46	99.18	99.15
S % Total	0.01	0.7	26.2	28	0.01	---	---	21.7
C % Total	---	---	---	---	---	0.06	---	---
C % inorganic	---	---	---	---	---	<.05	---	---
Ag ppm	0	0	312	288	0	1.2	0.8	0.4
Ag oz/T			9.1	8.4				
Au ppb	<5	<5	3590	5910	<5	20	<5	10
Al %	4.46	5.14	0.05	---	0.24	5.32	3.12	2.23
As ppm	0	0	---	---	0	---	---	---
Ba ppm	470	1580	10	---	70	140	10	70
Be ppm	3.2	2.7	<.5	---	<0.5	5.5	0.5	2
Bi ppm	<2	<2	68	---	<2	<2	<2	<2
Ca %	0.02	0.1	0.03	---	0.1	0.01	0.01	<.01
Cd ppm	0	0	>500	---	0	1	0.5	1.5
Co ppm	12	13	24	---	26	18	25	109
Cr ppm	4	14	<1	---	13	1	4	1
Cu ppm	2	3	789	---	18	0	4	6
Fe %	0.22	0.95	4.26	---	1.41	3.12	3.23	17.55
K %	0.25	3.71	0.03	---	0.04	2.23	0.14	1.12
Mg %	0.06	0.05	<.01	---	0.17	0.46	0.16	0.22
Mn ppm	10	33	65	---	110	40	80	5
Mo ppm	<1	2	14	---	2	13	9	122
Na %	3.26	1.74	0.02	---	0.01	0.23	1.98	0.15
Ni ppm	<1	1	34	---	<1	<1	1	3
P ppm	90	110	<10	---	10	30	<10	<10
Pb ppm	9	20			2	248	130	272
Pb %			16.85	12.9				
Sb ppm	<5	<5	---	---	<5	---	---	---
Sr ppm	38	131	<1	---	9	21	16	13
Ti %	0.07	0.08	<.01	---	0.01	0.17	0.07	0.08
V ppm	2	5	<1	---	7	7	<1	7
W ppm	110	120	60	---	240	140	190	470
Zn ppm	9	77			274	428	186	120
Zn %			32.6	31				

Table 3 (continued). Whole-rock geochemical analyses from Chemex Laboratories, Vancouver, B.C., Canada, of mineralized and associated unmineralized samples, Bonnifield district, Alaska.

Sample	97ADb61a	03ADb09b1	03ADb09b2	97ADb62	97ADb65b	97ADb65e
Setting	DC South	Moose Ck Mbr South of DC	Moose Ck Mbr South of DC	AM	AM	AM
Rock type and sulfides	siliceous MS; major sl	yellowish green, hydrotherm. alt.(?) quartz- sericite schist	quartz-sericite schist	MS; major py; minor cp; trace gn & sl	MS; py, sl, gn & cp	altered metarhyolite schist
wt %						
SiO ₂	63.22	82.63	79.68	---	---	76.83
Al ₂ O ₃	4.63	8.11	11.2	---	---	11.11
TiO ₂	0.14	0.21	0.2	---	---	0.14
Fe ₂ O ₃	12.67	1.72	0.67	---	---	2.34
MnO	0.18	0.01	0.01	---	---	0.04
CaO	0.01	0.07	0.09	---	---	0.32
MgO	2.88	0.16	0.22	---	---	2.17
K ₂ O	0.41	2.89	4.02	---	---	2.6
Na ₂ O	0.05	0.57	0.9	---	---	0.29
P ₂ O ₅	0.01	0.04	0.03	---	---	0.03
Cr ₂ O ₃	<.01	<.01	<.01	---	---	<.01
LOI	8.13	1.96	1.34	---	---	3.36
Total	92.33	98.37	98.36	---	---	99.23
S % Total	9.06	0.46	0.01	38.6	25.6	---
C % Total	---	---	---	---	---	---
C % inorganic	---	---	---	---	---	---
Ag ppm	7.8	0.7	0	---	---	0.6
Ag oz/T						
Au ppb	20	7	<5	590	460	<5
Al %	2.42	4.16	5.66	---	---	6.03
As ppm	---	18	0	---	---	---
Ba ppm	40	1970	2330	---	---	2400
Be ppm	0.5	0.7	1	---	---	1
Bi ppm	26	<2	<2	---	---	4
Ca %	<.01	0.05	0.06	---	---	0.24
Cd ppm	138	0	0	---	---	1
Co ppm	22	5	6	---	---	21
Cr ppm	4	4	2	---	---	8
Cu ppm	1540	7	1	---	---	188
Fe %	8.51	1.16	0.46	---	---	1.61
K %	0.33	2.25	3.1	---	---	1.28
Mg %	1.81	0.12	0.17	---	---	1.31
Mn ppm	1205	27	31	---	---	280
Mo ppm	3	1	<1	---	---	1
Na %	0.05	0.45	0.64	---	---	0.29
Ni ppm	<1	<1	<1	---	---	1
P ppm	<10	120	90	---	---	<10
Pb ppm	3570	59	7	---	---	114
Pb %				10.6		
Sb ppm	---	<5	<5	---	---	---
Sr ppm	8	28	23	---	---	32
Ti %	0.03	0.07	0.08	---	---	0.05
V ppm	<1	6	7	---	---	2
W ppm	180	50	80	---	---	200
Zn ppm		20	17	---	---	270
Zn %	4.76			34.2		

Table 4. Whole-rock geochemical analyses of mineralized and unmineralized Bonnifield rock samples for which fluorine was analyzed.

[Analyses shown in order of increasing F content. Data provided by Hans Smit of Grayd Resource Corporation. Samples with a DC98 prefix were analyzed by Acme Laboratories and those with a DC99 prefix were analyzed by Chemex Laboratories, both in Vancouver, B.C., Canada. Methods of analysis used by Acme Laboratories: aqua regia digestion with ICP-MS instrumentation; for F analysis, sample was mixed with 1:1 NaOH and then fused and analyzed by ion selective electrode. Methods of analysis used by Chemex Laboratories: aqua regia digestion with ICP-AES instrumentation; for F analysis, sample was prepared by carbonate-nitrate fusion and analyzed by ion selective electrode. N = north; and DC = Dry Creek. Sample locations shown on Sample Location Map. Blank cells indicate that no analysis was made for that element]

Drill hole	Dry Creek deposit zone	Lab no.	From (Ft)	To (Ft)	Au ppb	Ag ppm	As ppm	Ba ppm	Ca %	Cd ppm	Cu ppm	Fe %	Hg ppb	La ppm	Mg %	Mn ppm	Mo ppm	Ni ppm	P ppm	Pb ppm	S%	Sb ppm	Sr ppm	Ti %	Zn ppm	F ppm
DC99-72	N Fosters	335175	1198.0	1237.0						2	2.82				375				4	0.08			108	150		
DC98-61	Fosters	86103	90.0	106.0	<5	<0.2	2	170	0.70	3.0	56	1.52	<1	<10	0.56	2320	3	48	270	8	0.74	2	28	<0.01	1585	600
DC99-75	DC North	335240	90.0	122.0						25	1.38				895				4	0.37			62	600		
DC99-72	N Fosters	335164	823.0	857.0						3	1.04				200				10	0.10			24	750		
DC98-61	Fosters	86109	230.0	239.5	<5	<0.2	<2	30	0.25	<0.5	50	7.50	1	30	1.19	1265	<1	39	340	2	0.22	4	17	<0.01	3370	810
DC98-61	Fosters	86107	181.5	205.0	<5	<0.2	<2	60	0.56	6.0	35	1.90	<1	10	0.45	1430	<1	57	340	6	0.38	<2	31	<0.01	3830	830
DC98-61	Fosters	86108	205.0	230.0	<5	<0.2	18	60	0.46	0.5	60	1.86	<1	10	0.41	1250	<1	39	290	2	0.15	<2	29	<0.01	2420	830
DC99-72	N Fosters	335166	889.0	992.0						4	1.03				240				12	0.05			24	830		
DC98-61	Fosters	86112	277.0	281.0	<5	0.2	44	130	0.17	<0.5	7	2.53	<1	50	0.56	100	3	21	80	72	1.31	6	16	<0.01	120	850
DC99-72	N Fosters	335168	953.0	1040.0						35	2.98				190				12	0.57			152	980		
DC99-72	N Fosters	335169	1040.0	1065.0						22	3.13				345				12	0.17			92	980		
DC98-58	Discovery	85806	289.0	330.0	<5	<0.2	<2	160	1.79	2.0	51	3.36	<1	10	1.17	375	<1	35	700	16	0.55	<2	138	<0.01	766	1060
DC99-72	N Fosters	335167	992.0	949.0						3	1.31				100				18	0.16			26	1060		
DC98-58	Discovery	85805	255.0	289.0	<5	0.2	10	230	1.87	0.5	26	2.61	<1	<10	0.97	355	1	25	800	18	0.56	<2	159	<0.01	352	1080
DC99-74	DC South	335223	115.0	118.0	15	<0.2	16	20	0.07	5.5	77	2.51	<1	410	0.26	320	10	4	<10	574	2.02	<2	10	<0.01	1820	1100
DC98-61	Fosters	86104	111.0	123.0	<5	<0.2	10	90	0.17	5.0	26	2.18	<1	10	0.63	2140	<1	54	210	6	0.43	<2	12	<0.01	2130	1140
DC99-75	DC North	335250	340.0	360.0						2	1.97				255				26	0.53			214	1160		
DC99-75	DC North	335194	450.0	469.0	<5	0.8	34	80	<0.01	12.0	203	2.92	<1	60	0.75	215	4	1	<10	1445	2.41	<2	2	<0.01	4200	1160
DC98-61	Fosters	86114	301.0	321.0	<5	<0.2	4	140	0.14	<0.5	3	2.63	<1	60	1.24	140	<1	1	10	2	0.13	<2	11	<0.01	164	1200
DC99-72	N Fosters	335165	857.0	889.0						7	0.79				100				26	0.03			26	1200		
DC99-72	N Fosters	335170	1065.0	1091.0						9	2.48				280				8	0.12			188	1200		
DC99-74	DC South	335236	310.0	329.0	<5	0.2	26	30	0.05	1.0	4	4.18	<1	50	0.29	75	11	<1	<10	40	4.49	2	6	<0.01	376	1200
DC99-74	DC South	335238	350.0	370.0	15	3.4	82	10	0.03	1.0	7	6.47	<1	40	0.05	15	12	<1	<10	48	>5.00	4	9	<0.01	480	1200
DC99-75	DC North	335239	60.0	90.0						32	1.46				715				2	0.33			56	1260		
DC99-74	DC South	335224	118.0	121.0	20	7.6	34	30	0.08	71.5	3360	4.16	4	260	0.22	240	58	3	20	16600	>5.00	18	9	<0.01	24000	1280
DC99-74	DC South	335230	176.0	199.0	<5	<0.2	2	40	0.31	0.5	8	2.68	<1	20	0.84	720	4	<1	60	66	1.52	<2	7	<0.01	650	1300
DC99-75	DC North	335249	320.0	340.0						3	1.62				90				10	0.61			48	1300		
DC99-72	N Fosters	335177	1262.0	1287.0						85	2.72				1980				40	1.89			126	1330		
DC99-75	DC North	335243	196.0	221.0						13	1.41				45				52	1.24			310	1330		
DC99-75	DC North	335244	221.0	239.0						23	1.80				90				52	1.44			294	1340		
DC99-74	DC South	335237	329.0	350.0	5	1.0	60	40	1.26	2.0	5	4.50	<1	60	0.69	1020	12	<1	<10	26	3.62	6	21	<0.01	706	1350
DC98-58	Discovery	85801	186.0	199.0	<5	<0.2	<2	190	1.33	<0.5	4	1.31	<1	10	0.47	375	<1	4	520	12	0.34	<2	82	<0.01	220	1360
DC99-72	N Fosters	335163	793.0	823.0						7	1.55				200				18	0.36			34	1360		
DC98-58	Discovery	85807	330.0	379.0	<5	0.4	<2	180	2.10	6.0	40	3.59	<1	50	1.51	515	1	38	460	18	1.44	<2	97	<0.01	2060	1400
DC99-75	DC North	335200	623.0	630.0						7	3.16				225				16	1.91			212	1400		
DC99-75	DC North	33																								

Table 4 (continued). Whole-rock geochemical analyses of mineralized and unmineralized Bonnifield rock samples for which fluorine was analyzed.

Drill hole	Dry Creek deposit zone	Lab no.	From (Ft)	To (Ft)	Au ppb	Ag ppm	As ppm	Ba ppm	Ca %	Cd ppm	Cu ppm	Fe %	Hg ppb	La ppm	Mg %	Mn ppm	Mo ppm	Ni ppm	P ppm	Pb ppm	S%	Sb ppm	Sr ppm	Ti %	Zn ppm	F ppm
DC99-72	N Fosters	335174	1177.0	1198.0						7	1.81					120			14	0.17				138	1700	
DC99-75	DC North	335189	495.0	532.0	<5	0.2	6	70	0.08	4.5	50	2.59	<1	110	0.38	180	7	2	10	576	2.37	<2	5	<0.01	1480	1700
DC98-61	Fosters	86113	281.0	301.0	<5	<0.2	8	160	0.06	<0.5	3	3.25	<1	90	1.43	135	<1	<1	<10	2	0.23	<2	7	<0.01	276	1720
DC99-75	DC North	335196	469.0	495.0							26	2.30				225									530	1750
DC99-74	DC South	335234	262.0	285.0	<5	<0.2	2	30	0.27	<0.5	3	2.51	<1	160	1.01	140	<1	<1	<10	16	0.62	4	10	<0.01	312	1770
DC99-75	DC North	335242	178.0	196.0							14	1.07				160									528	1800
DC99-75	DC North	335190	360.0	375.0							6	2.70				205									346	1800
DC99-72	N Fosters	335176	1251.0	1262.0							7	0.87				215									6	1830
DC99-75	DC North	335191	375.0	400.0							19	2.99				180									404	1830
DC99-75	DC North	335192	400.0	425.0							8	2.23				320									268	1840
DC99-72	N Fosters	335178	1287.0	1326.0							13	7.04				950									244	1900
DC99-74	DC South	335220	69.0	90.0	<5	<0.2	<2	90	<0.01	4.0	21	2.26	<1	40	1.12	570	3	4	<10	550	0.62	<2	2	<0.01	784	1950
DC99-72	N Fosters	335171	1127.0	1148.0							6	2.31				170									238	1960
DC99-74	DC South	335229	156.0	176.0	<5	<0.2	18	20	0.03	0.5	15	3.30	<1	50	0.81	675	5	<1	<10	192	2.50	<2	2	<0.01	400	2000
DC99-72	N Fosters	335173	1148.0	1177.0							7	1.58				75									102	2080
DC99-74	DC South	335219	50.0	69.0	<5	0.6	16	30	<0.01	4.0	24	2.81	<1	10	0.65	330	8	1	10	466	2.30	<2	1	<0.01	812	2100
DC99-74	DC South	335227	142.5	156.0	<5	<0.2	16	40	0.07	5.0	66	2.80	<1	50	0.33	440	3	4	80	1115	2.71	6	5	<0.01	1840	2100
DC98-58	Discovery	85809	486.0	495.0	<5	<0.2	<2	130	0.61	6.5	54	1.93	<1	150	0.75	135	2	9	60	18	0.71	<2	20	<0.01	622	2120
DC99-75	DC North	335241	162.0	178.0							9	0.99				60									654	2200
DC98-61	Fosters	86110	239.5	259.0	<5	1.2	442	50	0.94	3.5	24	5.32	<1	20	0.28	690	48	113	330	60	4.02	16	50	<0.01	3200	2240
DC98-58	Discovery	85810	505.0	515.0	<5	0.2	<2	60	0.14	1.0	156	3.78	<1	230	0.62	225	3	2	<10	20	2.05	2	9	<0.01	818	2300
DC98-61	Fosters	86111	259.0	277.0	<5	0.2	22	130	1.25	0.5	16	2.96	<1	90	1.70	850	3	34	230	2	0.23	2	53	<0.01	240	2370
DC98-58	Discovery	85808	386.0	395.0	<5	<0.2	4	70	0.14	1.5	180	3.88	<1	220	0.66	225	<1	2	<10	10	1.69	<2	11	<0.01	924	2400
DC99-74	DC South	335222	90.0	115.0	<5	0.6	12	50	0.09	8.5	183	2.91	<1	140	1.24	630	5	5	10	1140	1.42	8	5	<0.01	2200	2400
DC99-75	DC North	335247	275.0	285.0							16	4.41				90									488	2450
DC99-74	DC South	335225	121.0	124.0	<5	<0.2	16	50	0.02	21.0	384	3.80	<1	420	0.63	460	22	3	<10	1530	3.34	<2	9	<0.01	5920	2460
DC98-58	Discovery	85813	637.0	663.0	<5	0.2	<2	180	0.14	3.0	7	1.26	<1	150	0.99	65	9	3	40	14	0.41	<2	12	<0.01	236	2550
DC98-61	Fosters	86101	37.0	54.0	<5	<0.2	14	190	0.18	5.0	8	1.89	<1	150	1.01	675	2	12	70	22	<0.01	<2	25	0.01	3070	3450
DC98-58	Discovery	85814	663.0	694.0	135	4.0	252	70	0.25	2.5	65	2.80	<1	230	0.44	90	17	1	30	270	2.74	14	11	<0.01	1790	3600
DC98-58	Discovery	85812	605.0	632.0	<5	0.2	92	70	0.23	1.5	10	3.45	<1	100	1.32	260	48	25	170	34	2.54	14	9	<0.01	1180	3620
DC98-61	Fosters	86105	141.0	161.0	<5	<0.2	16	40	0.08	0.5	4	2.00	<1	70	0.95	165	5	11	100	18	0.60	4	6	<0.01	864	4120
DC98-61	Fosters	86106	161.0	181.5	<5	<0.2	28	50	0.13	6.0	6	2.45	<1	110	0.66	340	26	26	230	30	1.58	8	11	<0.01	2560	4180
DC98-58	Discovery	85811	586.0	605.0	15	7.0	52	120	0.18	1.0	32	2.41	<1	100	1.86	170	2	1	90	418	1.08	14	11	<0.01	966	4400

Table 5. Averages of electron microprobe analyses of sulfide minerals from the Bonnifield district, Alaska.

[Analytical operating conditions and procedures are given in Appendix. Sample locations shown on Sample Locality Map; complete table of analyses given in Table 6. Abbreviations: AM = Anderson Mountain deposit; WTF = West Tundra Flats; Fosters = Fosters Creek zone; Lago = Lago Creek zone; Discovery = Discovery Zone; DC South = Dry Creek South zone. All zones are in the Dry Creek deposit. Analyses made by Robert L. Oscarson and Cynthia Dusel-Bacon. Blank cells indicate that no analysis was made for that element]

Sample no.	Zone/ Deposit	No. anal. averaged	Cu	Pb	As	Fe	S	Zn	Cd	Se	Mn	Ag	Co	Sb	Ni	Hg	Sn
Average weight percent arsenopyrite																	
DC98-38-208	Fosters	4	0.002	0.058	42.689	36.220	22.059	0.074	0.008	0.000	0.002	0.000	0.054		0.008	0.000	
DC98-60-128.9	Fosters	7	0.022	0.052	43.176	35.913	21.793	0.178	0.004	0.000	0.002	0.007	0.043	0.021	0.002	0.000	0.006
Average weight percent chalcopyrite																	
97ADb65b	AM	4	35.644	0.170	0.001	30.291	35.109	0.165	0.012	0.006	0.025	0.021	0.035	0.006	0.004	0.011	0.095
AM98-1-108	AM	8	35.347	0.138	0.003	30.250	35.130	0.076	0.002	0.004	0.014	0.015	0.037	0.005	0.002	0.000	0.016
AM98-1-201	AM	9	35.472	0.110	0.005	30.203	35.402	0.082	0.006	0.006	0.007	0.009	0.027	0.000	0.012	0.006	
AM98-5-212	AM	10	35.012	0.137	0.004	29.786	35.039	0.128	0.008	0.015	0.004	0.011	0.039	0.000	0.001	0.004	
DC97-36-190	DC South	22	35.217	0.115	0.002	30.158	35.349	0.127	0.006	0.008	0.008	0.015	0.033		0.005	0.005	
DC98-51-379	Lago	7	35.597	0.104	0.006	29.966	35.268	0.051	0.000	0.009	0.005	0.005	0.034	0.007	0.007		
DC98-60-128.9	Fosters	9	35.410	0.105	0.008	30.161	35.190	0.081	0.007	0.005	0.007	0.020	0.030	0.000	0.006	0.001	0.088
DC98-60-79	Fosters	4	35.309	0.080	0.003	30.038	35.353	0.143	0.006	0.000	0.011	0.026	0.042	0.001	0.001	0.003	0.036
DC98-60-80	Fosters	3	35.685	0.091	0.003	30.446	35.000	0.106	0.000	0.004	0.006	0.007	0.023	0.000	0.000	0.000	0.010
97ADb58b	WTF	6	34.797	0.104	0.002	30.315	35.196	0.143	0.007	0.012	0.008	0.008	0.027	0.005	0.006	0.000	
97ADb58f	WTF	3	35.264	0.144	0.000	30.227	35.140	0.162	0.009	0.009	0.003	0.004	0.035	0.003	0.008	0.000	0.009
97ADb58g	WTF	7	34.877	0.105	0.001	29.911	35.021	0.564	0.008	0.009	0.010	0.005	0.028	0.000	0.001	0.002	
Average weight percent galena																	
97ADb65b	AM	5	0.018	86.215	0.000	0.200	13.105	0.100	0.316	0.085	0.002	0.004	0.031	0.005	0.002	0.020	0.023
AM98-1-201	AM	18	0.099	86.684	0.000	0.220	13.122	0.094	0.370	0.106	0.005	0.076	0.012	0.001	0.013	0.035	
DC97-36-190	DC South	4	0.000	87.528	0.000	0.060	13.274	0.011	0.275	0.009	0.003	0.066	0.007		0.012	0.024	
DC97-9-170A	Discovery	5	0.0336	86.922	0.000	0.003	13.246	0.044	0.280	0.013	0.002	0.099	0.012		0.000	0.014	
DC98-38-208	Fosters	19	0.005	87.284	0.000	0.019	13.224	0.121	0.244	0.007	0.007	0.012	0.019		0.005	0.030	
DC98-51-379	Lago	11	0.029	86.993	0.000	0.214	13.130	0.125	0.280	0.006	0.009	0.000	0.013		0.006	0.032	
DC98-60-128.9	Fosters	12	0.005	87.774	0.000	0.005	13.142	0.044	0.284	0.006	0.009	0.001	0.019	0.009	0.014	0.024	0.011
DC98-60-79	Fosters	11	0.031	87.494	0.000	0.004	13.120	0.065	0.282	0.018	0.005	0.000	0.021	0.001	0.008	0.035	0.019
DC98-60-80	Fosters	3	0.022	87.546	0.000	0.010	13.057	0.054	0.267	0.012	0.001	0.000	0.002	0.008	0.000	0.040	0.019
97ADb58b	WTF	10	0.006	87.673	0.000	0.036	13.087	0.200	0.272	0.033	0.004	0.000	0.027	0.013	0.003	0.021	
97ADb58f	WTF	7	0.017	87.089	0.000	0.104	13.021	0.239	0.281	0.078	0.002	0.004	0.018	0.004	0.007	0.071	0.013
97ADb58g	WTF	3	0.000	87.030	0.000	0.016	13.114	0.175	0.271	0.012	0.009	0.022	0.000	0.030	0.023	0.028	
Average weight percent pyrite																	
97ADb65b	AM	15	0.063	0.315	0.578	46.422	53.206	0.106	0.004	0.003	0.048	0.011	0.048	0.030	0.038	0.000	0.009
AM98-1-108	AM	20	0.020	0.190	0.078	46.595	53.670	0.024	0.007	0.019	0.006	0.012	0.059	0.008	0.029	0.000	0.012
AM98-1-201	AM	21	0.179	0.239	0.220	46.374	53.604	0.634	0.004	0.009	0.006	0.013	0.067	0.016	0.015	0.000	
AM98-5-212	AM	19	0.126	0.324	0.049	46.066	53.440	0.148	0.003	0.011	0.084	0.017	0.077	0.003	0.005	0.002	
DC97-36-190	DC South	67	0.019	0.159	0.008	46.864	54.056	0.108	0.006	0.012	0.004	0.007	0.051		0.005	0.001	
DC97-9-170A	Discovery	10	0.154	0.209	0.737	46.336	53.665	0.465	0.003	0.008	0.006	0.018	0.045		0.036	0.000	
DC98-51-379	Lago	28	0.039	0.181	0.225	46.652	53.752	0.082	0.004	0.005	0.006	0.010	0.049	0.004	0.001		
DC98-38-208	Fosters	11	0.023	0.167	0.214	46.879	53.996	0.224	0.006	0.006	0.007	0.008	0.033		0.031	0.004	

Table 5 (continued). Averages of electron microprobe analyses of sulfide minerals from the Bonnifield district, Alaska.

Sample no.	Zone/ Deposit	No. anal. averaged	Cu	Pb	As	Fe	S	Zn	Cd	Se	Mn	Ag	Co	Sb	Ni	Hg	Sn
DC98-60-128.9	Fosters	10	0.004	0.151	0.022	47.341	53.839	0.090	0.006	0.001	0.004	0.011	0.039	0.004	0.003	0.002	0.010
DC98-60-79	Fosters	10	0.053	0.170	0.063	46.841	53.766	0.149	0.006	0.006	0.006	0.010	0.047	0.006	0.009	0.003	0.004
DC98-60-80	Fosters	3	0.000	0.190	0.038	46.813	53.820	0.310	0.015	0.004	0.004	0.014	0.036	0.006	0.007	0.007	0.004
97ADb58b	WTF	18	0.023	0.244	0.246	46.459	53.564	0.099	0.008	0.008	0.006	0.014	0.035	0.012	0.004	0.001	
97ADb58f	WTF	11	0.044	0.194	0.121	46.526	53.519	0.073	0.006	0.006	0.003	0.009	0.067	0.002	0.010	0.001	0.009
97ADb58g	WTF	12	0.007	0.168	0.294	46.312	53.367	0.231	0.008	0.005	0.005	0.006	0.049	0.006	0.005	0.004	
Average weight percent sphalerite																	
97ADb65b	AM	10	0.064	0.130	0.004	2.242	33.190	66.783	0.101	0.006	0.003	0.016	0.003	0.008	0.009	0.001	0.010
AM98-1-108	AM	14	0.289	0.111	0.003	1.972	33.152	65.386	0.178	0.005	0.007	0.008	0.011	0.004	0.006	0.015	0.007
AM98-1-201	AM	11	0.095	0.086	0.005	2.061	33.240	66.260	0.077	0.002	0.007	0.021	0.014	0.009	0.007	0.011	
AM98-5-212	AM	19	0.503	0.139	0.003	1.987	33.152	63.884	0.123	0.010	0.010	0.015	0.017	0.005	0.005	0.010	
DC97-36-190	DC South	21	0.048	0.101	0.005	2.757	33.869	64.762	0.188	0.005	0.021	0.010	0.005		0.010	0.003	
DC97-9-170A	Discovery	10	0.047	0.122	0.008	1.763	33.815	65.901	0.081	0.008	0.011	0.008	0.010		0.002	0.006	
DC98-51-379	Lago	23	0.007	0.100	0.003	1.975	33.772	65.586	0.185	0.004	0.049	0.007	0.010	0.009	0.004		
DC98-38-208	Fosters	18	0.013	0.099	0.004	1.857	34.035	65.620	0.145	0.006	0.044	0.015	0.006		0.008	0.004	
DC98-60-128.9	Fosters	11	0.004	0.090	0.006	1.790	33.132	66.759	0.170	0.010	0.029	0.013	0.008	0.003	0.006	0.002	0.010
DC98-60-79	Fosters	11	0.235	0.106	0.001	2.368	33.138	65.504	0.173	0.004	0.028	0.012	0.006	0.007	0.006	0.006	0.009
DC98-60-80	Fosters	8	0.016	0.117	0.006	2.727	33.649	65.523	0.165	0.006	0.040	0.000	0.013	0.015	0.003	0.000	0.000
97ADb58b	WTF	18	0.017	0.116	0.001	4.740	33.223	62.251	0.223	0.007	0.081	0.016	0.017	0.007	0.005	0.002	
97ADb58f	WTF	11	0.007	0.139	0.005	4.807	33.203	62.053	0.248	0.003	0.098	0.022	0.012	0.008	0.010	0.003	0.001
97ADb58g	WTF	12	0.011	0.109	0.007	5.297	33.225	61.581	0.240	0.006	0.085	0.015	0.015	0.005	0.003	0.006	
Average weight percent tetrahedrite																	
DC97-9-170A	Discovery	13	22.528	0.110	0.187	3.856	23.062	2.764	0.000	0.004	0.006	23.353	0.020	27.045	0.007	0.022	
DC98-38-208	Fosters	19	35.173	0.073	2.487	3.962	25.494	3.405	0.010	0.001	0.008	7.115	0.009	25.238	0.002	0.021	
DC98-60-79	Fosters	8	39.565	0.073	1.158	3.511	25.702	3.936	0.009	0.000	0.015	0.689	0.016	25.802	0.004	0.008	0.088

Table 6. Complete electron microprobe analyses of sulfide minerals from the Bonnifield district, Alaska.

[Zone (or deposit) abbreviations as in Table 5; asp = arsenopyrite; cp = chalcopyrite; gn = galena; py = pyrite; sl = sphalerite; td = tetrahedrite. Analyses made by Robert L. Oscarson and Cynthia Dusel-Bacon. Analytical conditions for electron microprobe analyses given in Appendix. Sample locations shown on Sample Location Map. Blank cells indicate that no analysis was made for that element]

Sample	Deposit or Zone	Min.	Analysis No.	Cu	Pb	As	Fe	S	Zn	Cd	Se	Mn	Ag	Co	Sb	Ni	Hg	Sn	Total
DC98-38-208	Fosters	asp	127	0	0.046	43.049	36.039	21.752	0	0	0	0	0	0.059		0.015	0	100.96	
DC98-38-208	Fosters	asp	128	0.003	0.064	42.199	36.548	22.37	0	0.011	0	0	0	0.039		0	0	101.234	
DC98-38-208	Fosters	asp	129	0	0.071	42.888	36.003	22.01	0	0	0	0	0	0.038		0.016	0	101.026	
DC98-38-208	Fosters	asp	139	0.004	0.05	42.62	36.288	22.102	0.297	0.022	0	0.007	0	0.08		0	0	101.47	
DC98-60-128.9	Fosters	asp	116	0.004	0.03	42.92	35.855	21.788	0.104	0	0	0	0	0.05	0.015	0.008	0	0.016	100.79
DC98-60-128.9	Fosters	asp	117	0	0.088	43.209	36.283	21.836	0.25	0.001	0	0	0.011	0.056	0.054	0	0	101.788	
DC98-60-128.9	Fosters	asp	119	0	0.076	43.385	35.725	21.777	0.275	0	0	0.007	0.039	0.08	0.008	0	0	0.014	101.386
DC98-60-128.9	Fosters	asp	128	0	0.051	43.156	35.9	21.752	0.092	0.009	0	0	0	0.048	0.013	0	0	0	101.021
DC98-60-128.9	Fosters	asp	129	0	0.076	43.258	36.036	21.78	0.144	0.005	0	0.002	0	0.033	0	0	0	0	101.334
DC98-60-128.9	Fosters	asp	132	0.152	0.031	43.499	35.72	21.519	0.204	0.014	0	0.004	0	0.022	0.032	0	0	0	101.197
DC98-60-128.9	Fosters	asp	138	0	0.011	42.804	35.872	22.102	0.177	0	0	0	0	0.009	0.024	0.009	0	0.009	101.017
97ADb65b	AM	cp	73	35.546	0.185	0.003	30.541	35.342	0.034	0.026	0	0.048	0.031	0.026	0.024	0.016	0.03	0.119	101.971
97ADb65b	AM	cp	74	36.305	0.163	0	30.43	35.13	0.223	0.01	0.008	0.014	0.042	0.047	0	0	0.012	0.042	102.426
97ADb65b	AM	cp	88	35.408	0.195	0.002	30.42	34.938	0.361	0.008	0	0.025	0.011	0.03	0	0	0	0.076	101.474
97ADb65b	AM	cp	92	35.316	0.138	0	29.771	35.027	0.042	0.002	0.015	0.011	0	0.036	0	0	0	0.141	100.499
AM98-1-108	AM	cp	66	35.407	0.07	0.02	30.288	35.193	0.078	0	0.009	0.03	0.001	0	0.003	0	0	0	101.099
AM98-1-108	AM	cp	69	35.329	0.305	0	30.226	34.922	0.16	0.016	0.007	0.024	0.035	0.026	0.013	0	0	0	101.063
AM98-1-108	AM	cp	74	35.099	0.149	0	30.393	35.265	0.018	0	0.006	0	0	0.035	0	0.014	0	0.042	101.021
AM98-1-108	AM	cp	75	35.085	0.133	0	30.133	35.106	0.065	0	0	0	0.016	0.023	0	0	0	0.011	100.572
AM98-1-108	AM	cp	76	35.435	0.168	0.002	30.508	35.034	0.078	0	0.009	0	0.037	0.061	0.021	0	0	0.01	101.363
AM98-1-108	AM	cp	84	35.483	0.081	0	30.175	35.045	0.112	0	0	0.002	0.031	0.09	0	0	0	0	101.019
AM98-1-108	AM	cp	91	35.735	0.131	0	29.969	35.227	0.082	0	0	0.016	0	0.024	0	0	0	0.039	101.223
AM98-1-108	AM	cp	92	35.199	0.068	0	30.309	35.249	0.015	0	0.004	0.036	0	0.038	0	0	0	0.028	100.946
AM98-1-201	AM	cp	88	35.252	0.116	0	29.961	35.163	0.052	0.005	0	0	0	0.045	0	0	0	0	100.594
AM98-1-201	AM	cp	104	35.474	0.1	0	30.154	35.443	0.118	0.005	0.013	0.005	0	0.005	0	0	0	0	101.317
AM98-1-201	AM	cp	107	35.943	0.062	0	30.346	35.343	0.006	0	0.013	0.014	0.029	0.012	0	0	0	0	101.768
AM98-1-201	AM	cp	120	35.121	0.106	0.007	30.666	35.344	0.118	0.012	0.011	0.027	0	0.038	0	0.006	0	0	101.456
AM98-1-201	AM	cp	121	35.775	0.143	0	30.146	35.341	0.03	0	0.003	0	0	0.053	0	0.037	0.028	0	101.556
AM98-1-201	AM	cp	136	35.368	0.123	0.016	30.14	35.273	0	0	0.004	0	0	0.02	0	0.006	0	0	100.95
AM98-1-201	AM	cp	140	35.99	0.075	0	29.89	35.44	0.177	0	0	0	0.045	0.033	0	0.027	0	0	101.677
AM98-1-201	AM	cp	141	34.974	0.139	0.023	30.253	35.311	0.037	0	0	0.01	0	0.029	0	0	0.007	0	100.783
AM98-1-201	AM	cp	146	35.348	0.128	0	30.271	35.962	0.198	0.033	0.007	0.005	0.003	0.009	0	0.028	0.018	0	102.01
AM98-5-212	AM	cp	31	34.965	0.137	0.001	30.085	34.754	0.018	0	0.026	0	0.007	0	0.002	0	0	0	99.995
AM98-5-212	AM	cp	35	34.686	0.107	0.004	29.59	34.89	0.167	0.008	0.002	0.013	0.009	0.034	0	0	0	0	99.51
AM98-5-212	AM	cp	38	35.338	0.11	0.007	29.948	34.908	0	0	0.012	0.002	0	0.051	0	0	0.01	0	100.386
AM98-5-212	AM	cp	39	35.377	0.062	0	29.69	35.057	0	0.005	0.018	0	0.045	0.054	0	0	0	0	100.308
AM98-5-212	AM	cp	46	35.394	0.109	0.006	30.368	35.216	0.062	0.015	0.013	0	0	0.013	0	0	0	0	101.196
AM98-5-212	AM	cp	52	34.676	0.185	0	29.419	35.041	0.308	0.023	0.019	0.015	0	0.033	0	0	0.03	0	99.749
AM98-5-212	AM	cp	59	35.176	0.137	0	29.475	35.155	0.167	0.007	0.028	0	0.034	0.07	0	0	0	0	100.249
AM98-5-212	AM	cp	68	34.999	0.199	0	30.084	35.167	0.031	0	0.028	0	0	0.058	0	0.009	0	0	100.575
AM98-5-212																			

Table 6 (continued). Complete electron microprobe analyses of sulfide minerals from the Bonnifield district, Alaska.

Sample	Deposit or Zone	Min.	Analysis No.	Cu	Pb	As	Fe	S	Zn	Cd	Se	Mn	Ag	Co	Sb	Ni	Hg	Sn	Total
DC97-36-190	DC South	cp	93	34.398	0.17	0	30.285	35.209	0.013	0	0	0.035	0.019	0.041	0	0.024	0	100.194	
DC97-36-190	DC South	cp	94	35.381	0.101	0.011	30.405	35.335	0.053	0	0.008	0.017	0.01	0.046	0.007	0	0	101.374	
DC97-36-190	DC South	cp	111	35.536	0.09	0	30.098	35.453	0.194	0.004	0	0.014	0.011	0	0	0.001	0	101.401	
DC97-36-190	DC South	cp	112	35.237	0.116	0	30.177	35.539	0.545	0.02	0	0	0.015	0.026	0.025	0.016	0	101.716	
DC97-36-190	DC South	cp	117	35.369	0.141	0	30.266	35.309	0.146	0.007	0.015	0.012	0.024	0.081	0	0	0	101.37	
DC97-36-190	DC South	cp	120	35.632	0.152	0	30.274	35.452	0.129	0	0.001	0.019	0	0.031	0.026	0	0	0	101.716
DC97-36-190	DC South	cp	121	35.43	0.042	0	30.056	35.311	0.282	0.04	0.022	0	0	0.054	0	0	0	101.237	
DC97-36-190	DC South	cp	122	35.72	0.112	0.006	30.054	35.515	0.212	0.001	0.023	0.002	0.04	0.037	0	0.023	0	101.745	
DC97-36-190	DC South	cp	127	36.158	0.071	0	30.232	35.439	0.123	0.002	0	0	0.004	0.043	0	0	0	102.072	
DC97-36-190	DC South	cp	128	35.261	0.127	0	30.187	35.415	0.081	0	0.028	0	0.024	0.018	0	0	0	101.141	
DC97-36-190	DC South	cp	139	35.235	0.14	0.004	30.187	35.678	0.079	0.013	0	0	0.041	0.085	0	0	0	101.462	
DC97-36-190	DC South	cp	140	35.161	0.098	0	30.493	35.097	0.087	0	0.024	0.02	0.025	0.014	0	0.005	0	101.024	
DC97-36-190	DC South	cp	142	35.219	0.146	0.005	30.415	35.471	0.122	0.001	0.006	0	0	0.027	0.01	0	0	101.422	
DC97-36-190	DC South	cp	143	35.487	0.103	0	30.512	35.292	0.126	0	0.005	0.022	0	0.02	0	0	0	101.567	
DC98-60-128.9	Fosters	cp	114	34.64	0.162	0.002	29.811	35.278	0	0	0	0	0.026	0.082	0	0	0	0.085	100.086
DC98-60-128.9	Fosters	cp	115	35.534	0.108	0.008	29.928	35.1	0.139	0.021	0	0.002	0.03	0	0	0.003	0	0.094	100.967
DC98-60-128.9	Fosters	cp	120	35.707	0.091	0.016	30.49	35.28	0.143	0	0	0	0	0.031	0	0.038	0	0.124	101.92
DC98-60-128.9	Fosters	cp	121	35.397	0.152	0	30.2	35.206	0	0	0	0.011	0	0.031	0	0.008	0	0.116	101.121
DC98-60-128.9	Fosters	cp	131	35.427	0.073	0	29.903	35.365	0.043	0	0.02	0.013	0.028	0.066	0	0	0	0.015	100.953
DC98-60-128.9	Fosters	cp	139	35.34	0.048	0	30.012	35.191	0.165	0	0.005	0	0.003	0	0.003	0	0	0.035	100.802
DC98-60-128.9	Fosters	cp	140	35.322	0.137	0	30.257	35.017	0.123	0.018	0	0.003	0.019	0.056	0	0	0	0.118	101.07
DC98-60-128.9	Fosters	cp	146	35.541	0.117	0.027	30.408	35.261	0.074	0.025	0	0.013	0.041	0	0.001	0	0	0.125	101.633
DC98-60-128.9	Fosters	cp	147	35.783	0.057	0.015	30.442	35.016	0.045	0.002	0.02	0.022	0.037	0	0	0.003	0.007	0.083	101.532
DC98-60-79	Fosters	cp	65	35.111	0.084	0.011	29.723	35.636	0.094	0.011	0	0	0.022	0.008	0	0	0	0.024	100.724
DC98-60-79	Fosters	cp	89	35.319	0.117	0	30.049	35.431	0.123	0	0	0.03	0.03	0.09	0	0.003	0	0.01	101.202
DC98-60-79	Fosters	cp	90	35.574	0.077	0	30.153	35.205	0.305	0	0	0.012	0	0.032	0.003	0	0	0.048	101.409
DC98-60-79	Fosters	cp	91	35.233	0.042	0	30.227	35.138	0.049	0.013	0	0	0.052	0.037	0	0	0.012	0.062	100.865
DC98-60-80	Fosters	cp	7	35.481	0.1	0	30.313	35.308	0.154	0	0.003	0	0	0.029	0	0	0	0	101.388
DC98-60-80	Fosters	cp	8	35.722	0.087	0	30.551	35.106	0.15	0	0.001	0	0.021	0.021	0	0	0	0	101.659
DC98-60-80	Fosters	cp	14	35.852	0.086	0.01	30.473	34.586	0.014	0	0.007	0.018	0	0.019	0	0	0.031	0	101.096
DC98-51-379	Lago	cp	80	35.036	0.096	0.016	30.203	35.511	0.1	0.003	0.023	0	0	0.064	0	0	0	0	101.052
DC98-51-379	Lago	cp	81	35.707	0.154	0	30.331	35.162	0.029	0	0	0.001	0	0.028	0.018	0	0	0	101.43
DC98-51-379	Lago	cp	82	35.826	0.088	0.013	30.011	35.37	0.068	0	0.004	0	0	0.01	0.02	0	0	0	101.41
DC98-51-379	Lago	cp	90	35.56	0.052	0	30.222	35.61	0.037	0	0.011	0	0.013	0.034	0	0	0	0	101.539
DC98-51-379	Lago	cp	91	35.847	0.1	0.014	29.896	35.104	0	0	0.013	0.016	0	0.071	0.003	0	0	0	101.064
DC98-51-379	Lago	cp	92	35.796	0.098	0	30.113	35.156	0.031	0	0.012	0.015	0.025	0.006	0.003	0	0	0	101.255
DC98-51-379	Lago	cp	101	35.407	0.14	0	28.984	34.965	0.094	0	0	0	0	0.027	0.006	0.051	0	99.674	
97ADb58b	WTF	cp	53	34.84	0.135	0	30.021	35.237	0.151	0.008	0.002	0.016	0.015	0	0.011	0	0	0	100.436
97ADb58b	WTF	cp	56	34.831	0.154	0	30.383	35.288	0.051	0	0.033	0	0.001	0.009	0	0	0	0	100.75
97ADb58b	WTF	cp	57	34.982	0.13	0.011	30.427	35.565	0.113	0.01	0.024	0	0	0.032	0	0.018	0	0	101.312
97ADb58b	WTF	cp	59	34.871	0.08	0	30.067	35.229	0.175	0.022	0.006	0	0.03</						

Table 6 (continued). Complete electron microprobe analyses of sulfide minerals from the Bonnifield district, Alaska.

Sample	Deposit or Zone	Min.	Analysis No.	Cu	Pb	As	Fe	S	Zn	Cd	Se	Mn	Ag	Co	Sb	Ni	Hg	Sn	Total
97ADb58g	WTF	cp	112	34.992	0.133	0	29.746	35.092	0.927	0	0.009	0.016	0	0	0	0	0	100.915	
97ADb65b	AM	gn	60	0	86.189	0	0.006	13.173	0	0.277	0.042	0	0	0	0.025	0	0	0.014	99.726
97ADb65b	AM	gn	61	0	85.346	0	0.121	13.222	0.318	0.33	0.019	0	0	0	0	0	0	0.038	99.394
97ADb65b	AM	gn	69	0	85.876	0	0.634	13.025	0.128	0.313	0.123	0.01	0.015	0.063	0	0	0.011	0.026	100.224
97ADb65b	AM	gn	71	0	86.564	0	0.224	13.06	0.054	0.356	0.137	0	0	0.012	0	0	0.029	0.005	100.441
97ADb65b	AM	gn	91	0.088	87.099	0	0.013	13.043	0	0.302	0.103	0	0.005	0.08	0	0.01	0.059	0.034	100.836
AM98-1-201	AM	gn	93	0.152	85.414	0	0.638	13.06	0	0.34	0.103	0.003	0.123	0.012	0	0.017	0.076		99.938
AM98-1-201	AM	gn	95	0.158	86.914	0	0.112	13.214	0	0.348	0.088	0.017	0.14	0	0	0	0		100.991
AM98-1-201	AM	gn	96	0	86.653	0	0.04	13.034	0.212	0.356	0.117	0	0.106	0	0	0	0		100.518
AM98-1-201	AM	gn	97	0.031	86.653	0	0.088	13.069	0.018	0.387	0.12	0.018	0.087	0	0	0	0		100.474
AM98-1-201	AM	gn	101	0.364	86.9	0	0.283	13.307	0	0.342	0.1	0	0.092	0	0	0.083	0.118		101.589
AM98-1-201	AM	gn	106	0.085	87.403	0	0.063	13.007	0.077	0.372	0.096	0	0.081	0.029	0	0.032	0		101.245
AM98-1-201	AM	gn	109	0.084	87.151	0	0.082	13.045	0.225	0.39	0.124	0.004	0.051	0.022	0	0	0		101.178
AM98-1-201	AM	gn	110	0	87.245	0	0.483	13.137	0.298	0.372	0.133	0.012	0.095	0	0	0.001	0.012		101.788
AM98-1-201	AM	gn	113	0.319	86.616	0	0.204	13.162	0.076	0.373	0.093	0	0.091	0.028	0	0	0.037		100.999
AM98-1-201	AM	gn	114	0	86.419	0	0.014	13.095	0.025	0.378	0.1	0	0.03	0.018	0	0.017	0.067		100.163
AM98-1-201	AM	gn	122	0.033	86.732	0	0.022	13.151	0.103	0.333	0.083	0.016	0	0	0	0	0.079		100.552
AM98-1-201	AM	gn	124	0	87.224	0	0.065	13.23	0.119	0.381	0.05	0	0.066	0	0	0.009	0.067		101.211
AM98-1-201	AM	gn	125	0.024	86.476	0	0.246	13.305	0.122	0.361	0.066	0	0.025	0.063	0	0	0.057		100.745
AM98-1-201	AM	gn	133	0	86.529	0	0.166	13.15	0	0.402	0.1	0	0	0.039	0	0.06	0		100.446
AM98-1-201	AM	gn	135	0.246	85.416	0	0.901	12.882	0.213	0.369	0.083	0	0.054	0	0	0	0.03		100.194
AM98-1-201	AM	gn	143	0.127	86.833	0	0.203	13.119	0	0.362	0.142	0.011	0.092	0	0.013	0	0.079		100.981
AM98-1-201	AM	gn	144	0.053	86.728	0	0.124	13.029	0.084	0.403	0.157	0.013	0.112	0	0.005	0	0.007		100.715
AM98-1-201	AM	gn	145	0.101	87.001	0	0.233	13.191	0.112	0.389	0.144	0	0.12	0	0	0.01	0		101.301
DC97-36-190	DC South	gn	41	0	87.503	0	0.039	13.27	0.038	0.268	0.03	0	0.074	0		0	0		101.222
DC97-36-190	DC South	gn	42	0	87.201	0	0.112	13.189	0.003	0.275	0	0.003	0.037	0		0.01	0.051		100.881
DC97-36-190	DC South	gn	43	0	87.771	0	0.052	13.367	0.004	0.253	0	0	0.042	0.026		0.006	0.014		101.535
DC97-36-190	DC South	gn	44	0	87.637	0	0.036	13.268	0	0.305	0.005	0.008	0.112	0		0.033	0.029		101.433
DC97-9-170A	Discovery	gn	155	0.025	86.518	0	0	13.138	0.117	0.247	0.004	0	0.086	0		0	0		100.135
DC97-9-170A	Discovery	gn	160	0.039	86.942	0	0.005	13.363	0	0.289	0.003	0	0.108	0.005		0	0.031		100.785
DC97-9-170A	Discovery	gn	174	0	86.926	0	0.01	13.064	0.105	0.294	0.024	0.01	0.08	0.007		0	0.02		100.54
DC97-9-170A	Discovery	gn	175	0	86.355	0	0	13.262	0	0.311	0.017	0	0.123	0		0	0.018		100.086
DC97-9-170A	Discovery	gn	176	0.104	87.869	0	0	13.404	0	0.257	0.015	0	0.098	0.047		0	0		101.794
DC98-38-208	Fosters	gn	118	0.044	88.114	0	0.025	13.308	0.025	0.234	0.003	0	0	0		0.001	0.03		101.784
DC98-38-208	Fosters	gn	119	0.017	87.569	0	0.026	12.817	0.092	0.261	0.004	0	0	0.014		0	0.079		100.879
DC98-38-208	Fosters	gn	120	0	87.567	0	0.018	13.23	0.208	0.221	0.012	0.008	0	0		0	0.039		101.303
DC98-38-208	Fosters	gn	121	0	88.221	0	0.032	13.081	0.093	0.259	0	0.003	0	0.059		0	0.02		101.768
DC98-38-208	Fosters	gn	124	0	87.968	0	0.007	13.34	0.259	0.214	0.031	0.025	0.033	0.005		0	0.022		101.904
DC98-38-208	Fosters	gn	130	0	87.476	0	0.187	13.226	0	0.223	0	0.007	0	0.031		0	0		101.15
DC98-38-208	Fosters	gn	137	0	87.066	0	0	13.233	0.078	0.213	0.011	0.015	0.115	0		0.017	0.006		100.754
DC98-38-208	Fosters	gn	142	0	87.253	0	0	13.376	0	0.22	0	0.006	0	0.019		0.013	0.01		100.897
DC98-38-208	Fosters	gn	143	0	87.305	0	0.012	13.184	0.053	0.246	0.003	0	0	0		0	0	</	

Table 6 (continued). Complete electron microprobe analyses of sulfide minerals from the Bonnifield district, Alaska.

Sample	Deposit or Zone	Min.	Analysis No.	Cu	Pb	As	Fe	S	Zn	Cd	Se	Mn	Ag	Co	Sb	Ni	Hg	Sn	Total
DC98-60-128.9	Fosters	gn	101	0.029	87.489	0	0	13.21	0.133	0.284	0.009	0	0	0.016	0.035	0.034	0	0.026	101.265
DC98-60-128.9	Fosters	gn	102	0	88.238	0	0.022	13.27	0	0.285	0.012	0	0	0.03	0.017	0.006	0	0.018	101.898
DC98-60-128.9	Fosters	gn	103	0	87.893	0	0.026	13.142	0	0.284	0	0	0	0	0	0.002	0	0	101.347
DC98-60-128.9	Fosters	gn	110	0.005	87.868	0	0	13.094	0.019	0.276	0	0	0	0.002	0	0.02	0.017	0.038	101.339
DC98-60-128.9	Fosters	gn	113	0	87.726	0	0	12.927	0.072	0.269	0.017	0	0	0	0.029	0.008	0.103	0	101.151
DC98-60-128.9	Fosters	gn	125	0	87.958	0	0	13.11	0.094	0.265	0	0.028	0	0.024	0.001	0	0	0	101.48
DC98-60-128.9	Fosters	gn	126	0	87.26	0	0	13.208	0.126	0.294	0.009	0.036	0	0.021	0	0.041	0.034	0	101.029
DC98-60-128.9	Fosters	gn	135	0	88.273	0	0.008	13.257	0	0.287	0	0.018	0	0.028	0.001	0.013	0.015	0	101.9
DC98-60-128.9	Fosters	gn	137	0	87.806	0	0	13.054	0.059	0.231	0.012	0.003	0.017	0	0.009	0	0.049	0.028	101.268
DC98-60-128.9	Fosters	gn	141	0	87.108	0	0.002	13.176	0.014	0.325	0.004	0.022	0	0.028	0.003	0.015	0	0	100.697
DC98-60-128.9	Fosters	gn	148	0.02	87.698	0	0.003	13.165	0.01	0.293	0	0	0	0.067	0.015	0	0.072	0	101.343
DC98-60-128.9	Fosters	gn	149	0	87.966	0	0	13.091	0	0.312	0.005	0	0	0.008	0.001	0.034	0.001	0.017	101.435
DC98-60-79	Fosters	gn	56	0	87.295	0	0.006	12.992	0	0.297	0.023	0	0	0	0	0.01	0.011	0.047	100.681
DC98-60-79	Fosters	gn	60	0	87.286	0	0.002	13.1	0	0.295	0.02	0.015	0	0.038	0	0.011	0.038	0	100.805
DC98-60-79	Fosters	gn	62	0	87.224	0	0	13.12	0	0.295	0.026	0	0	0	0	0	0.069	0	100.734
DC98-60-79	Fosters	gn	67	0.059	87.055	0	0.02	13.168	0.09	0.272	0.003	0	0	0.01	0	0	0.046	0	100.723
DC98-60-79	Fosters	gn	71	0.052	87.381	0	0	13.187	0.113	0.276	0.032	0	0	0.015	0	0	0	0.033	101.089
DC98-60-79	Fosters	gn	76	0	87.405	0	0	13.13	0	0.309	0	0	0	0.057	0	0	0.071	0.042	101.014
DC98-60-79	Fosters	gn	81	0	87.756	0	0.002	13.09	0.127	0.252	0.049	0.004	0	0	0	0.025	0.02	0	101.325
DC98-60-79	Fosters	gn	87	0.04	87.805	0	0.017	13.081	0	0.293	0.014	0.005	0	0.035	0	0	0.02	0.042	101.352
DC98-60-79	Fosters	gn	88	0	87.488	0	0	13.039	0	0.264	0.019	0	0	0	0.009	0.031	0.037	0.036	100.923
DC98-60-79	Fosters	gn	95	0.133	88.159	0	0	13.169	0.315	0.296	0.005	0.031	0	0.077	0	0	0.053	0	102.238
DC98-60-79	Fosters	gn	97	0.056	87.576	0	0	13.245	0.072	0.254	0.011	0.004	0	0	0	0.013	0.025	0.004	101.26
DC98-60-80	Fosters	gn	3	0	87.406	0	0.016	13.009	0.064	0.256	0.012	0	0	0	0	0	0.071	0.012	100.846
DC98-60-80	Fosters	gn	4	0.048	87.273	0	0.002	13.058	0.097	0.285	0.018	0	0	0.005	0.019	0	0	0.042	100.847
DC98-60-80	Fosters	gn	11	0.019	87.959	0	0.012	13.105	0	0.26	0.006	0.003	0	0	0.004	0	0.048	0.003	101.419
DC98-51-379	Lago	gn	31	0	87.18	0	0.059	13.041	0.04	0.265	0.004	0.002	0	0.021	0	0	0.034	0	100.646
DC98-51-379	Lago	gn	32	0	86.615	0	0.092	12.947	0	0.244	0	0.019	0	0	0	0	0.075	0	99.992
DC98-51-379	Lago	gn	33	0	86.837	0	0.013	13.08	0	0.236	0.01	0.032	0.005	0.048	0	0.014	0.006	0	100.281
DC98-51-379	Lago	gn	41	0	87.311	0	0.019	13.181	0	0.291	0	0.005	0	0	0	0.014	0.058	0	100.879
DC98-51-379	Lago	gn	42	0	86.631	0	0	13.166	0.127	0.306	0.017	0	0	0	0	0.013	0.059	0	100.319
DC98-51-379	Lago	gn	43	0	87.254	0	0	13.193	0.045	0.26	0.002	0	0	0	0	0	0.06	0	100.814
DC98-51-379	Lago	gn	52	0	86.331	0	1.701	13.386	0.049	0.304	0.023	0	0	0.005	0	0.02	0.003	0	101.822
DC98-51-379	Lago	gn	53	0	87.076	0	0.267	13.136	0.123	0.28	0	0.043	0	0	0	0	0	0	100.925
DC98-51-379	Lago	gn	54	0	87.384	0	0.067	13.158	0	0.314	0.002	0	0	0.037	0	0.003	0.032	0	100.997
DC98-51-379	Lago	gn	75	0.072	86.895	0	0.069	13.137	0.642	0.305	0	0	0	0	0	0	0	0	101.12
DC98-51-379	Lago	gn	93	0.245	87.404	0	0.068	13.003	0.349	0.28	0.01	0	0	0.037	0	0	0.03	0	101.426
97ADb58b	WTF	gn	38	0	88.07	0	0.022	13.134	0.012	0.226	0.024	0	0	0.074	0	0	0.041	0	101.603
97ADb58b	WTF	gn	40	0.026	87.482	0	0.046	13.064	0.294	0.297	0.015	0.002	0	0.057	0.032	0	0.029	0	101.344
97ADb58b	WTF	gn	44	0.02	87.4	0	0	13.033	0.034	0.304	0.023	0	0	0	0	0.014	0.008	0	100.836
97ADb58b	WTF	gn	45	0	87.366	0	0.003	13.118	0.287	0.342	0.022	0	0	0.023	0	0.004	0	0	101.165
97ADb58b	WTF	gn	49	0	86.915	0	0.018	13.102</											

Table 6 (continued). Complete electron microprobe analyses of sulfide minerals from the Bonnifield district, Alaska.

Sample	Deposit or Zone	Min.	Analysis No.	Cu	Pb	As	Fe	S	Zn	Cd	Se	Mn	Ag	Co	Sb	Ni	Hg	Sn	Total
97ADb58f	WTF	gn	48	0	85.25	0	0.177	13.127	0.133	0.28	0.071	0	0	0.009	0	0	0.019	0	99.066
97ADb58f	WTF	gn	54	0.084	87.762	0	0.006	12.99	0.029	0.256	0.074	0.003	0.023	0.008	0	0.02	0.089	0.009	101.353
97ADb58g	WTF	gn	93	0	87.878	0	0	13.034	0.102	0.223	0.017	0.008	0.066	0	0.051	0	0.045		101.424
97ADb58g	WTF	gn	94	0	86.454	0	0.017	13.126	0.277	0.313	0	0	0	0	0.013	0.048	0.003		100.251
97ADb58g	WTF	gn	95	0	86.758	0	0.03	13.183	0.146	0.277	0.02	0.018	0	0	0.027	0.021	0.036		100.516
97ADb65b	AM	py	65	0	0.166	0.669	46.439	53.11	0	0	0.007	0.028	0.052	0.038	0.173	0	0	0	100.682
97ADb65b	AM	py	66	0	0.169	0.858	46.532	52.949	0.028	0	0	0.054	0	0	0.014	0	0	0.004	100.608
97ADb65b	AM	py	67	0	0.232	0.15	47.051	53.756	0.191	0	0.012	0	0	0	0	0.044	0.007	0	101.443
97ADb65b	AM	py	68	0.908	0.325	0.05	46.11	53.048	0.142	0	0	0.005	0.045	0.056	0.044	0	0	0.004	100.737
97ADb65b	AM	py	72	0.041	0.237	1.097	45.711	53.207	0.017	0	0.007	0.199	0.021	0.083	0.045	0.005	0	0	100.67
97ADb65b	AM	py	75	0	0.224	0.063	47.411	53.452	0.028	0	0.004	0.014	0.013	0.074	0.016	0	0	0.012	101.311
97ADb65b	AM	py	76	0	0.182	1.761	45.878	52.768	0	0.004	0	0.122	0	0.076	0.034	0.015	0	0.008	100.848
97ADb65b	AM	py	78	0	1.161	0.222	45.9	53.337	0	0	0	0.065	0	0.053	0.015	0.022	0	0.009	100.784
97ADb65b	AM	py	79	0	0.733	0.115	45.464	52.844	0.104	0	0	0.067	0	0.048	0.01	0.049	0	0.038	99.472
97ADb65b	AM	py	80	0	0.212	0.947	46.447	53.055	0.009	0.029	0	0.089	0	0.037	0.036	0	0	0.006	100.867
97ADb65b	AM	py	85	0	0.179	0.51	46.587	53.319	0	0.008	0	0	0.02	0.091	0	0.322	0	0.02	101.056
97ADb65b	AM	py	94	0	0.193	0.093	46.863	53.674	0.146	0.001	0	0	0	0.071	0.002	0.022	0	0	101.065
97ADb65b	AM	py	95	0	0.328	0.485	46.635	53.38	0.009	0.02	0.005	0.073	0.01	0.037	0	0.02	0	0.003	101.005
97ADb65b	AM	py	96	0	0.175	1.462	46.123	52.629	0.313	0	0	0.002	0.007	0.044	0.061	0.002	0	0.027	100.845
97ADb65b	AM	py	97	0	0.213	0.195	47.177	53.558	0.6	0	0.016	0	0	0.007	0	0.063	0	0	101.829
AM98-1-108	AM	py	58	0	0.163	0.22	46.717	53.561	0	0	0.012	0.002	0	0.038	0	0	0	0.045	100.758
AM98-1-108	AM	py	59	0.028	0.288	0.111	46.54	53.504	0.144	0	0.006	0.034	0	0.015	0.01	0.041	0	0.024	100.745
AM98-1-108	AM	py	63	0	0.149	0.107	46.87	53.713	0.061	0	0	0	0	0.049	0.029	0.007	0	0	100.985
AM98-1-108	AM	py	64	0	0.175	0.289	46.473	53.512	0.026	0	0.013	0.015	0.011	0.013	0.006	0	0	0	100.533
AM98-1-108	AM	py	65	0.044	0.211	0.015	45.962	53.612	0	0.031	0	0	0.023	0.05	0.012	0.252	0	0	100.212
AM98-1-108	AM	py	67	0.024	0.169	0	46.892	53.924	0	0.012	0.027	0	0	0.019	0.037	0	0	0.017	101.121
AM98-1-108	AM	py	68	0	0.578	0.016	46.579	53.097	0	0	0	0	0	0.052	0	0.035	0	0.014	100.371
AM98-1-108	AM	py	72	0.031	0.153	0	46.818	53.945	0.021	0	0.007	0.013	0.006	0.081	0	0	0	0.015	101.09
AM98-1-108	AM	py	73	0.112	0.164	0.056	45.428	53.61	0	0.011	0.002	0.011	0.021	0.058	0	0.08	0	0	99.553
AM98-1-108	AM	py	79	0	0.2	0	46.851	53.736	0	0.005	0	0	0	0.077	0.027	0	0	0	100.896
AM98-1-108	AM	py	81	0.08	0.247	0.296	46.482	53.258	0.051	0.013	0.021	0	0	0.057	0.004	0	0	0	100.509
AM98-1-108	AM	py	88	0	0.186	0	46.696	53.491	0	0	0.017	0.017	0	0.057	0	0	0	0	100.464
AM98-1-108	AM	py	89	0	0.169	0	46.46	53.784	0.009	0	0.116	0	0.074	0.071	0.005	0	0	0.005	100.693
AM98-1-108	AM	py	90	0.019	0.209	0	45.885	53.799	0	0	0.038	0.001	0	0.081	0	0	0	0.039	100.071
AM98-1-108	AM	py	96	0	0.106	0.154	47.108	53.624	0.024	0.024	0.008	0.003	0.03	0.094	0	0.114	0	0	101.289
AM98-1-108	AM	py	98	0	0.107	0.015	46.606	53.732	0	0.006	0.045	0	0.017	0.089	0.004	0.003	0	0	100.624
AM98-1-108	AM	py	99	0	0.077	0.004	47.469	53.657	0.042	0.01	0.027	0	0.023	0.061	0	0.007	0	0.004	101.381
AM98-1-108	AM	py	100	0	0.105	0.144	46.705	54.058	0	0.027	0.014	0	0	0.038	0	0.005	0	0.061	101.157
AM98-1-108	AM	py	101	0.051	0.153	0.059	46.773	54.114	0.076	0	0.007	0.009	0.021	0.127	0.018	0	0	0	101.408
AM98-1-201	AM	py	86	0.04	0.142	0.017	47.108	54.215	0.062	0	0	0	0	0.072	0.019	0.006	0		101.681
AM98-1-201	AM	py	87	0.202	0.14	0.017	46.699	53.842	0.114	0	0	0	0.005	0.061	0.002	0.004	0		101.086

Table 6 (continued). Complete electron microprobe analyses of sulfide minerals from the Bonnifield district, Alaska.

Sample	Deposit or Zone	Min.	Analysis No.	Cu	Pb	As	Fe	S	Zn	Cd	Se	Mn	Ag	Co	Sb	Ni	Hg	Sn	Total
AM98-1-201	AM	py	126	2.199	0.212	0.185	45.477	52.529	0.104	0.003	0	0.004	0.038	0.084	0.01	0.041	0	100.886	
AM98-1-201	AM	py	127	0.284	0.174	0	46.727	53.91	0.237	0	0.01	0.009	0.028	0.031	0	0	0	101.41	
AM98-1-201	AM	py	134	0.04	0.192	0.026	46.96	54.288	0.037	0	0.01	0.025	0	0.024	0	0	0	101.602	
AM98-1-201	AM	py	137	0.339	0.123	0.459	46.91	53.28	0	0	0.006	0	0.009	0.058	0.122	0	0	101.306	
AM98-1-201	AM	py	142	0.049	0.175	0.06	46.692	54.218	0.493	0	0.003	0	0.017	0.086	0.038	0.017	0	101.848	
AM98-1-201	AM	py	147	0.086	0.142	0.01	47.064	54.066	0	0	0.016	0.011	0	0.084	0.021	0.003	0	101.503	
AM98-1-201	AM	py	148	0.006	0.122	0.57	46.912	53.57	0	0	0.016	0.055	0	0.051	0	0	0	101.302	
AM98-5-212	AM	py	33	0.006	0.192	0.06	46.695	53.662	0	0	0.011	0	0.004	0.095	0.001	0	0	100.726	
AM98-5-212	AM	py	37	0.16	0.155	0	46.386	53.724	0.167	0.001	0.002	0.049	0.01	0.075	0	0	0	100.729	
AM98-5-212	AM	py	42	0	0.22	0.02	46.552	53.734	0.104	0.015	0	0	0.013	0.032	0	0	0	100.69	
AM98-5-212	AM	py	43	0.036	0.16	0.061	46.308	53.612	0.089	0	0.016	0	0	0.075	0	0.005	0.032	100.394	
AM98-5-212	AM	py	47	0	0.197	0.097	46.587	53.773	0.07	0.001	0.025	0	0	0.014	0.004	0	0	100.768	
AM98-5-212	AM	py	49	1.346	0.378	0.02	45.343	52.717	0.206	0	0.042	0	0.027	0.069	0.008	0	0	100.156	
AM98-5-212	AM	py	53	0	0.226	0.075	46.387	53.399	0.127	0.018	0.001	0.025	0.031	0.061	0	0	0	100.35	
AM98-5-212	AM	py	54	0.085	0.437	0.051	45.355	53.541	0.342	0	0.018	0.323	0	0.023	0.016	0.025	0	100.216	
AM98-5-212	AM	py	55	0.016	0.82	0.125	44.947	52.921	0.11	0	0.006	0.516	0.042	0.094	0	0	0	99.597	
AM98-5-212	AM	py	56	0.233	0.123	0	46.405	53.497	0.131	0	0	0.022	0.073	0.096	0.001	0.021	0	100.602	
AM98-5-212	AM	py	58	0.069	0.29	0.023	45.735	51.458	0.288	0	0.013	0.047	0.005	0.132	0	0	0	98.06	
AM98-5-212	AM	py	60	0.041	0.271	0.101	46.252	53.76	0.106	0.002	0.008	0.082	0	0.084	0	0	0	100.707	
AM98-5-212	AM	py	61	0	0.239	0.07	46.43	53.935	0.108	0	0	0.012	0.024	0.062	0.004	0.009	0	100.893	
AM98-5-212	AM	py	62	0.061	0.246	0.06	45.957	53.557	0.264	0	0.024	0.242	0.009	0.057	0	0.001	0	100.478	
AM98-5-212	AM	py	64	0.003	0.25	0	46.376	53.871	0	0	0.01	0	0.003	0.074	0.015	0	0	100.602	
AM98-5-212	AM	py	65	0	0.395	0.012	46.581	53.63	0.177	0	0.018	0	0.028	0.115	0.014	0	0	100.97	
AM98-5-212	AM	py	81	0.066	0.278	0.007	45.931	53.201	0.08	0	0.001	0	0	0.073	0.001	0.012	0	99.65	
AM98-5-212	AM	py	83	0.109	0.177	0.034	46.467	54.46	0.213	0.007	0	0	0.032	0.073	0	0.019	0	101.591	
AM98-5-212	AM	py	84	0.154	1.103	0.117	44.556	52.912	0.229	0.005	0.021	0.272	0.017	0.158	0	0	0	99.544	
DC97-36-190	DC South	py	31	0.026	0.13	0	46.97	54.237	0	0.021	0.001	0.006	0	0.002	0	0	0	101.393	
DC97-36-190	DC South	py	32	0	0.093	0.004	46.937	54.16	0	0	0.009	0	0.006	0.033	0.008	0.011	0	101.261	
DC97-36-190	DC South	py	33	0	0.13	0.004	46.852	53.716	0.073	0.002	0.002	0.002	0	0.036	0	0	0	100.817	
DC97-36-190	DC South	py	34	0.029	0.153	0.027	46.93	53.902	0.01	0.01	0.006	0.032	0.019	0.036	0.018	0	0	101.172	
DC97-36-190	DC South	py	35	0.035	0.139	0.042	46.693	54.028	0.002	0	0	0	0	0.02	0.02	0	0	100.979	
DC97-36-190	DC South	py	36	0	0.134	0	46.989	54.153	0.058	0.01	0	0.016	0.003	0.091	0.009	0	0	101.463	
DC97-36-190	DC South	py	37	0.03	0.133	0.029	47.399	54.084	0.06	0	0	0	0	0.008	0.01	0	0	101.753	
DC97-36-190	DC South	py	38	0	0.123	0.004	47.044	54.152	0	0.004	0	0	0	0.036	0.002	0	0	101.365	
DC97-36-190	DC South	py	39	0	0.124	0.004	47.119	53.804	0	0.013	0	0.004	0	0.039	0	0	0	101.107	
DC97-36-190	DC South	py	40	0.008	0.17	0	46.664	53.931	0.365	0.009	0	0.007	0.004	0.036	0.012	0	0	101.206	
DC97-36-190	DC South	py	45	0	0.139	0	46.823	54.184	0.027	0	0.013	0	0	0.043	0.014	0	0	101.243	
DC97-36-190	DC South	py	52	0	0.199	0.008	46.634	54.251	0.515	0	0.009	0	0.004	0.063	0	0.008	0	101.691	
DC97-36-190	DC South	py	53	0	0.173	0.02	46.792	54.239	0.306	0	0	0.005	0.001	0.109	0	0	0	101.645	
DC97-36-190	DC South	py	55	0	0.162	0	46.944	53.944	0.025	0.015	0.045	0	0.017	0.04	0.004	0	0	101.196	
DC97-36-190	DC South	py	56	0.109	0.131	0	46.694	53.817	0.148	0	0.062	0.006	0	0.096	0	0	0	101.063	
DC97-36-190	DC South	py	57	0	0.129	0	47.354	53.835	0	0.017	0.016	0.006	0	0.054	0	0	0	101.411	
DC97-36-190	DC South	py	58	0	0.165														

Table 6 (continued). Complete electron microprobe analyses of sulfide minerals from the Bonnifield district, Alaska.

Sample	Deposit or Zone	Min.	Analysis No.	Cu	Pb	As	Fe	S	Zn	Cd	Se	Mn	Ag	Co	Sb	Ni	Hg	Sn	Total
DC97-36-190	DC South	py	68	0.04	0.14	0.001	46.679	53.668	0	0	0	0	0	0.018	0	0	0	100.546	
DC97-36-190	DC South	py	69	0.156	0.132	0	47.142	54.084	0	0.014	0.014	0	0	0.051	0.016	0	0	101.609	
DC97-36-190	DC South	py	70	0.013	0.144	0	47.168	53.822	0.04	0	0.026	0.009	0	0	0	0	0	101.222	
DC97-36-190	DC South	py	71	0	0.152	0.005	46.894	54.109	0	0	0.017	0	0	0.011	0	0	0	101.188	
DC97-36-190	DC South	py	72	0.042	0.175	0	46.656	53.786	0	0	0.023	0.002	0	0.06	0	0	0	100.744	
DC97-36-190	DC South	py	73	0.002	0.166	0	46.968	53.713	0.109	0	0	0	0.025	0.085	0	0	0	101.068	
DC97-36-190	DC South	py	74	0	0.164	0	46.765	54.172	0.109	0	0.016	0.018	0.026	0.033	0	0	0	101.303	
DC97-36-190	DC South	py	82	0	0.128	0.025	46.782	54.021	0.223	0	0.014	0	0	0.109	0.019	0	0	101.321	
DC97-36-190	DC South	py	83	0.07	0.191	0.012	46.751	54.166	0.244	0	0.017	0	0.009	0.071	0.006	0	0	101.537	
DC97-36-190	DC South	py	88	0	0.138	0.003	46.901	53.826	0.285	0	0	0.009	0.005	0.012	0	0	0	101.179	
DC97-36-190	DC South	py	92	0	0.235	0.029	47.125	54.288	0	0.006	0	0	0	0.048	0	0.014	0	101.745	
DC97-36-190	DC South	py	95	0	0.142	0	47.043	54.088	0.09	0	0	0.005	0.002	0.044	0.01	0	0	101.424	
DC97-36-190	DC South	py	96	0	0.142	0	46.575	54.232	0	0	0.019	0.008	0.029	0.064	0	0	0	101.069	
DC97-36-190	DC South	py	97	0.01	0.212	0.021	46.511	53.967	0.015	0	0.005	0.019	0.02	0	0	0	0	100.78	
DC97-36-190	DC South	py	98	0.006	0.205	0.047	46.284	53.83	0	0.018	0.005	0	0	0.049	0	0	0	100.444	
DC97-36-190	DC South	py	99	0.05	0.181	0.019	46.723	53.759	0	0.018	0	0.015	0.018	0.077	0	0	0	100.86	
DC97-36-190	DC South	py	100	0	0.161	0.004	46.87	54.278	0	0	0	0	0	0.045	0	0	0	101.358	
DC97-36-190	DC South	py	101	0.016	0.135	0	46.918	54.118	0	0.005	0.017	0	0	0.034	0	0	0	101.243	
DC97-36-190	DC South	py	102	0.008	0.129	0.016	46.727	54.215	0	0	0.012	0.005	0	0.021	0	0	0	101.133	
DC97-36-190	DC South	py	103	0	0.145	0.02	46.933	54.395	0	0.022	0	0	0	0.039	0.006	0	0	101.56	
DC97-36-190	DC South	py	104	0.029	0.124	0	46.631	54.198	0	0	0.003	0.01	0.024	0.052	0	0	0	101.071	
DC97-36-190	DC South	py	105	0	0.126	0.004	46.927	54.202	0.013	0.016	0.027	0	0.013	0.089	0.005	0	0	101.422	
DC97-36-190	DC South	py	106	0.07	0.276	0	47.154	54.509	0	0	0.04	0	0	0.125	0	0	0	102.174	
DC97-36-190	DC South	py	107	0	0.163	0	46.664	54.002	0	0	0.006	0	0	0.015	0	0	0	100.85	
DC97-36-190	DC South	py	108	0	0.203	0.029	46.73	54.192	0	0	0.011	0	0.005	0.029	0.029	0	0	0	101.228
DC97-36-190	DC South	py	109	0	0.209	0	46.692	54.269	0.108	0	0.003	0.005	0	0.079	0.026	0	0	0	101.391
DC97-36-190	DC South	py	110	0	0.154	0.002	46.97	54.051	0	0.033	0.005	0.002	0.036	0.046	0.007	0.007	0	0	101.313
DC97-36-190	DC South	py	113	0.088	0.161	0	46.593	54.095	0	0	0.017	0	0.02	0.047	0	0	0	0	101.021
DC97-36-190	DC South	py	114	0	0.186	0	46.498	54.192	1.051	0.009	0.008	0.004	0	0.059	0	0	0	102.007	
DC97-36-190	DC South	py	129	0.055	0.181	0.002	46.113	54.33	0.056	0.011	0	0.017	0	0.06	0.008	0	0	0	100.833
DC97-36-190	DC South	py	131	0.053	0.186	0	46.899	53.967	0.547	0	0.002	0.006	0.018	0.052	0	0	0	0	101.73
DC97-36-190	DC South	py	132	0.048	0.205	0.035	46.775	54.302	0.772	0	0.023	0.002	0	0.026	0	0	0	0	102.188
DC97-36-190	DC South	py	133	0.075	0.112	0.024	47.171	53.89	0	0.013	0	0.003	0	0.117	0.007	0	0	0	101.412
DC97-36-190	DC South	py	134	0.014	0.18	0.013	46.951	54.196	0.154	0	0.02	0.012	0	0.058	0	0	0	0	101.598
DC97-36-190	DC South	py	135	0	0.158	0.003	47.106	54.154	0	0.015	0	0.018	0.016	0.061	0	0	0	0	101.531
DC97-36-190	DC South	py	136	0	0.137	0.017	47.432	54.44	0.037	0	0.027	0	0.011	0.065	0	0	0	0	102.166
DC97-36-190	DC South	py	137	0	0.134	0	47.331	54.1	0.089	0	0.056	0	0	0.029	0.009	0	0	0	101.748
DC97-36-190	DC South	py	138	0.014	0.177	0.006	46.333	54.418	0.958	0.02	0.009	0	0	0.033	0.02	0	0	0	101.988
DC97-36-190	DC South	py	145	0	0.174	0.012	46.656	54.415	0.075	0.016	0.01	0	0	0.09	0	0	0	0	101.448
DC97-36-190	DC South	py	146	0.003	0.186	0.001	46.499	53.757	0.044	0.014	0.017	0	0	0.072	0.018	0	0	0	100.611
DC97-36-190	DC South	py	147	0	0.126	0.002	47.031	54.33	0.091	0.01	0.014	0	0.033	0.08	0	0	0	0	101.717
DC97-9-170A	Discovery	py	156	0.122	0.397	0.213	46.274	54.308	0.229	0.002	0	0	0.012	0.034	0.058	0	0	0	101.649
DC97-9-170A	Discovery	py	157	0	0.336	0.118	46												

Table 6 (continued). Complete electron microprobe analyses of sulfide minerals from the Bonnifield district, Alaska.

Sample	Deposit or Zone	Min.	Analysis No.	Cu	Pb	As	Fe	S	Zn	Cd	Se	Mn	Ag	Co	Sb	Ni	Hg	Sn	Total
DC98-38-208	Fosters	py	125	0.006	0.08	0.051	46.822	54.357	0.23	0.039	0.004	0.003	0.016	0.042		0.023	0	101.673	
DC98-38-208	Fosters	py	126	0.064	0.164	0.732	46.633	53.724	0.027	0	0.011	0.023	0	0.055		0.001	0	101.434	
DC98-38-208	Fosters	py	131	0.026	0.19	0.249	46.716	53.57	0.087	0	0	0.003	0.049	0.006		0	0	100.896	
DC98-38-208	Fosters	py	136	0	0.147	0.115	47.355	54.152	0.073	0	0	0.008	0	0.046		0.016	0.042	101.954	
DC98-38-208	Fosters	py	140	0.045	0.228	0.23	46.482	53.751	0.162	0	0	0.02	0	0.009		0	0.004	100.931	
DC98-38-208	Fosters	py	151	0.008	0.251	0.207	46.806	53.538	0	0.01	0.016	0.002	0.013	0.015		0.024	0	100.89	
DC98-38-208	Fosters	py	152	0	0.144	0.052	47.271	54.463	0.358	0	0.004	0	0	0.039		0	0	102.331	
DC98-38-208	Fosters	py	170	0	0.125	0.15	47.137	54.096	0.445	0	0	0	0	0.055		0.054	0	102.062	
DC98-38-208	Fosters	py	177	0.103	0.197	0.216	46.959	54.297	0.28	0.014	0	0	0.01	0.045		0.101	0	102.222	
DC98-38-208	Fosters	py	181	0	0.135	0.288	46.738	54.125	0.619	0	0.02	0	0.004	0.008		0.105	0	102.042	
DC98-60-128.9	Fosters	py	104	0	0.123	0.01	47.36	53.996	0	0.028	0	0.017	0.028	0.04	0.011	0	0.001	0	101.614
DC98-60-128.9	Fosters	py	105	0	0.206	0.008	47.3	53.98	0.247	0.008	0	0.005	0.034	0.056	0	0	0	0	101.844
DC98-60-128.9	Fosters	py	111	0	0.149	0.058	47.231	53.931	0	0	0	0	0	0.015	0.002	0.015	0	0.009	101.41
DC98-60-128.9	Fosters	py	112	0	0.089	0.059	47.467	53.722	0	0	0	0	0	0.035	0	0	0.008	0.017	101.397
DC98-60-128.9	Fosters	py	118	0.037	0.286	0.076	47.058	53.693	0.156	0	0	0.011	0.022	0.082	0.007	0.002	0	0	101.43
DC98-60-128.9	Fosters	py	133	0	0.155	0.005	47.464	53.821	0.09	0	0.005	0.007	0	0	0.014	0	0	0.029	101.59
DC98-60-128.9	Fosters	py	134	0	0.15	0	47.497	54.025	0.041	0.002	0	0.003	0.011	0.038	0	0.004	0	0	101.771
DC98-60-128.9	Fosters	py	143	0	0.104	0	47.217	53.456	0.098	0	0	0	0	0.037	0	0.013	0	0.015	100.94
DC98-60-128.9	Fosters	py	144	0	0.144	0	47.3	54.011	0.164	0.013	0.005	0.001	0.013	0.064	0.009	0	0	0.014	101.738
DC98-60-128.9	Fosters	py	145	0	0.107	0	47.517	53.757	0.107	0.011	0.004	0	0	0.021	0	0	0.009	0.011	101.544
DC98-60-79	Fosters	py	58	0	0.125	0.044	46.441	53.774	0.143	0	0.005	0.001	0.03	0.052	0	0	0	0	100.615
DC98-60-79	Fosters	py	64	0	0.138	0.063	46.898	53.721	0.111	0	0.028	0.007	0.03	0.058	0.003	0.016	0	0.029	101.102
DC98-60-79	Fosters	py	68	0.002	0.14	0.041	46.739	53.901	0.149	0.018	0.001	0.032	0.014	0.106	0	0.011	0	0.001	101.155
DC98-60-79	Fosters	py	72	0	0.174	0.101	47.059	53.52	0	0.005	0	0	0.021	0.056	0.013	0.001	0	0	100.95
DC98-60-79	Fosters	py	78	0	0.213	0.011	46.885	53.261	0.147	0.008	0	0.006	0	0.01	0	0.007	0	0.01	100.558
DC98-60-79	Fosters	py	80	0.025	0.207	0.016	46.991	54.418	0.358	0	0	0.014	0	0.019	0	0.014	0	0	102.062
DC98-60-79	Fosters	py	85	0	0.208	0.117	46.752	53.62	0.124	0.004	0	0	0	0	0	0.009	0	0	100.834
DC98-60-79	Fosters	py	92	0	0.132	0.024	47.017	54.004	0.393	0.018	0.014	0	0	0.053	0	0.027	0.011	0	101.693
DC98-60-79	Fosters	py	96	0	0.122	0	47.062	53.968	0.064	0.007	0.011	0.004	0	0.074	0	0	0	0	101.312
DC98-60-79	Fosters	py	99	0.498	0.245	0.209	46.561	53.469	0	0	0	0	0	0.04	0.04	0	0.019	0	101.081
DC98-60-80	Fosters	py	5	0	0.217	0.06	46.879	53.627	0.333	0.03	0	0.004	0.015	0.039	0	0.001	0	0.011	101.216
DC98-60-80	Fosters	py	6	0	0.183	0.012	46.622	53.908	0.261	0.007	0	0.006	0.003	0.021	0.008	0.021	0.02	0	101.072
DC98-60-80	Fosters	py	9	0	0.169	0.041	46.939	53.926	0.337	0.009	0.012	0.002	0.023	0.047	0.009	0	0	0	101.514
DC98-51-379	Lago	py	34	0.307	0.156	0	46.729	53.961	0.071	0	0.014	0.016	0	0.046	0	0	0	0	101.3
DC98-51-379	Lago	py	35	0.062	0.135	0.018	46.697	53.864	0	0	0.006	0.018	0.002	0.057	0	0.037	0	0	100.896
DC98-51-379	Lago	py	38	0.01	0.197	0	46.68	54.158	0.083	0	0	0	0	0.028	0.083	0	0	0	101.239
DC98-51-379	Lago	py	47	0	0.172	0.009	44.646	53.924	0.133	0.018	0.003	0.013	0	0.07	0.006	0	0	98.994	
DC98-51-379	Lago	py	48	0	0.193	0.141	46.484	53.182	0.229	0.006	0.006	0.005	0	0.043	0.007	0	0	100.296	
DC98-51-379	Lago	py	49	0.056	0.101	0	46.466	54.02	0	0	0	0.005	0.029	0.06	0	0	0	100.737	
DC98-51-379	Lago	py	50	0	0.139	0.065	46.823	54.293	0.012	0	0.017	0	0.014	0.066	0	0	0	101.429	
DC98-51-379	Lago	py	51	0.302	0.224	0.533	46.035	52.953	0.008	0	0.007	0	0.004	0.036	0	0	0	100.102	
DC98-51-																			

Table 6 (continued). Complete electron microprobe analyses of sulfide minerals from the Bonnifield district, Alaska.

Sample	Deposit or Zone	Min.	Analysis No.	Cu	Pb	As	Fe	S	Zn	Cd	Se	Mn	Ag	Co	Sb	Ni	Hg	Sn	Total
DC98-51-379	Lago	py	69	0.054	0.181	0.044	47.123	53.93	0	0.007	0.01	0.007	0.016	0.019		0	0	101.391	
DC98-51-379	Lago	py	70	0	0.173	1.174	46.35	53.074	0	0.013	0	0.02	0	0.053		0.029	0	100.886	
DC98-51-379	Lago	py	71	0	0.186	0.468	46.892	53.644	0	0	0.001	0	0.009	0.088		0	0	101.288	
DC98-51-379	Lago	py	72	0	0.219	0.047	46.933	53.753	0.098	0	0	0	0	0.065		0	0	101.115	
DC98-51-379	Lago	py	77	0.045	0.195	0.054	46.802	53.586	0.323	0.015	0.003	0.012	0.039	0.035		0	0	101.109	
DC98-51-379	Lago	py	84	0	0.193	0	46.975	53.842	0.113	0.001	0	0.008	0	0.026		0	0	101.158	
DC98-51-379	Lago	py	85	0	0.186	1.131	46.735	53.25	0.155	0.013	0.012	0.001	0.006	0.064		0.011	0	101.564	
DC98-51-379	Lago	py	88	0.016	0.179	0.003	47.184	53.9	0.054	0.002	0.003	0	0	0.053		0	0	101.394	
DC98-51-379	Lago	py	100	0	0.136	0	46.929	54.086	0	0	0.007	0.023	0.03	0.063		0	0	101.274	
97ADb58b	WTF	py	31	0	0.145	0.002	46.383	54.659	0.004	0	0.021	0	0.037	0.035	0	0.03	0	101.316	
97ADb58b	WTF	py	32	0	0.402	0.165	46.918	53.22	0.026	0.024	0	0.016	0.007	0.083	0.02	0	0	100.881	
97ADb58b	WTF	py	33	0	0.174	0.185	46.734	54.153	0.047	0.011	0.01	0	0	0.042	0.011	0	0	101.367	
97ADb58b	WTF	py	35	0	0.195	0.017	46.599	53.556	0.076	0	0.018	0	0	0.065	0.011	0	0	100.537	
97ADb58b	WTF	py	36	0	0.236	0.581	46.644	53.197	0	0.02	0.006	0	0	0.02	0	0	0	100.704	
97ADb58b	WTF	py	39	0.08	0.193	0.031	46.301	53.496	0.112	0	0.011	0	0.009	0.002	0	0.014	0	100.249	
97ADb58b	WTF	py	47	0	0.171	0.051	46.78	53.776	0.492	0.009	0	0	0.033	0	0.001	0	0	101.313	
97ADb58b	WTF	py	50	0.039	0.23	0.101	45.74	53.39	0	0	0.027	0.001	0.017	0.059	0.041	0.003	0	99.648	
97ADb58b	WTF	py	60	0.025	0.921	0.798	45.907	52.822	0	0.014	0	0	0	0.041	0.02	0	0	100.548	
97ADb58b	WTF	py	61	0.041	0.148	0.057	46.442	54.062	0.387	0	0	0	0	0.031	0.012	0	0	101.18	
97ADb58b	WTF	py	66	0.025	0.198	0.052	46.322	53.942	0.1	0.031	0.021	0	0	0.024	0.03	0	0	100.745	
97ADb58b	WTF	py	69	0.03	0.119	0.022	46.67	53.98	0.047	0	0.005	0.013	0.022	0.07	0	0.005	0	100.983	
97ADb58b	WTF	py	70	0.003	0.159	0.037	46.528	53.737	0	0.007	0	0	0.015	0.006	0.003	0.003	0	100.498	
97ADb58b	WTF	py	72	0.009	0.155	0.287	46.263	53.538	0.097	0	0.009	0	0	0.041	0	0	0.011	100.41	
97ADb58b	WTF	py	78	0.065	0.36	0.251	46.243	53.499	0.224	0.029	0	0.013	0.03	0.02	0.039	0	0	100.773	
97ADb58b	WTF	py	79	0.065	0.176	0.143	46.33	52.995	0.11	0	0	0	0.034	0	0.036	0	0.017	0	99.906
97ADb58b	WTF	py	80	0.039	0.145	1.634	46.417	52.657	0	0	0	0.023	0.029	0.036	0.018	0	0	100.998	
97ADb58b	WTF	py	81	0	0.257	0.016	47.044	53.467	0.066	0	0.01	0	0.044	0.018	0.011	0	0	100.933	
97ADb58f	WTF	py	26	0	0.187	0.113	46.386	53.961	0	0.004	0.007	0	0	0.124	0.003	0.007	0	0.024	100.816
97ADb58f	WTF	py	27	0.002	0.16	0.03	46.968	53.637	0.03	0	0	0.007	0	0.029	0	0.014	0	0	100.877
97ADb58f	WTF	py	32	0	0.138	0.019	46.799	53.668	0.106	0	0.02	0	0.015	0.083	0	0	0.021	100.869	
97ADb58f	WTF	py	33	0	0.192	0.229	46.501	53.067	0.121	0.014	0.004	0.016	0.001	0.078	0	0.02	0	100.243	
97ADb58f	WTF	py	39	0.083	0.15	0.661	46.463	53.202	0.032	0	0.022	0.006	0	0.045	0.003	0.027	0	0.02	100.714
97ADb58f	WTF	py	40	0	0.209	0.005	46.172	53.411	0.034	0	0	0	0.012	0.064	0.015	0	0	99.922	
97ADb58f	WTF	py	43	0	0.237	0.036	46.598	53.769	0.064	0.022	0	0	0	0.042	0	0.005	0	0.02	100.793
97ADb58f	WTF	py	49	0.071	0.231	0.012	46.415	53.896	0.127	0.018	0.015	0	0	0.066	0.002	0.014	0	0.005	100.872
97ADb58f	WTF	py	52	0	0.199	0.024	46.397	53.431	0.189	0.006	0	0	0.019	0.068	0	0	0.012	0	100.345
97ADb58f	WTF	py	53	0.091	0.218	0.011	46.769	53.628	0	0	0	0	0.021	0.099	0.004	0.02	0	0	100.861
97ADb58f	WTF	py	57	0.237	0.21	0.19	46.314	53.034	0.098	0	0	0.003	0.034	0.039	0	0	0	0.007	100.166
97ADb58g	WTF	py	85	0.005	0.177	0.014	46.594	53.545	0.399	0	0.001	0.012	0	0.099	0	0	0	0	100.846
97ADb58g	WTF	py	88	0.031	0.099	0.643	46.546	53.424	0	0	0.003	0.004	0	0.012	0	0.005	0	0	100.767
97ADb58g	WTF	py	90	0	0.162	0.046	46.175	53.628	0.397	0	0	0	0	0.05	0	0.004	0	0	100.462
97ADb58g	WTF	py	91	0	0.159	0.032	46.137	53.655	0.42	0	0.014	0	0.022	0.046	0.014	0.005	0	0	100.504
97ADb58g	WTF	py	99	0.028	0.209	0.008													

Table 6 (continued). Complete electron microprobe analyses of sulfide minerals from the Bonnifield district, Alaska.

Sample	Deposit or Zone	Min.	Analysis No.	Cu	Pb	As	Fe	S	Zn	Cd	Se	Mn	Ag	Co	Sb	Ni	Hg	Sn	Total
97ADb65b	AM	sl	64	0.172	0.218	0	2.491	33.436	66.781	0.092	0.008	0.01	0.039	0	0.001	0.019	0	0	103.267
97ADb65b	AM	sl	70	0	0.163	0	2.167	32.91	66.304	0.093	0	0.005	0	0.008	0	0	0	0.02	101.67
97ADb65b	AM	sl	77	0	0.089	0.001	2.398	32.866	65.942	0.093	0	0	0	0	0	0.002	0.005	0	101.396
97ADb65b	AM	sl	81	0	0.133	0	2.116	32.919	66.892	0.114	0	0.005	0.025	0	0	0	0	0.03	102.234
97ADb65b	AM	sl	84	0	0.145	0	2.32	33.254	66.977	0.091	0.002	0.001	0.004	0	0.018	0	0	0.004	102.816
97ADb65b	AM	sl	89	0.188	0.08	0	2.781	33.58	66.952	0.085	0.002	0.009	0.045	0.002	0.03	0.025	0	0.004	103.783
97ADb65b	AM	sl	90	0.091	0.142	0.017	1.703	33.436	67.549	0.123	0.033	0	0	0	0	0.018	0	0	103.112
97ADb65b	AM	sl	93	0.191	0.082	0.003	1.597	32.938	67.086	0.131	0.016	0.001	0.034	0.009	0.015	0.021	0	0.017	102.141
AM98-1-108	AM	sl	60	0.037	0.124	0.01	3.819	33.098	64.349	0.175	0.009	0.004	0	0	0	0	0	0.024	101.649
AM98-1-108	AM	sl	61	0.368	0.161	0.006	4.536	33.179	61.374	0.19	0	0	0	0	0.011	0.017	0.007	0	99.849
AM98-1-108	AM	sl	62	0.054	0.14	0.006	3.824	33.072	63.603	0.209	0	0	0	0.055	0	0	0.088	0.028	101.079
AM98-1-108	AM	sl	70	0.16	0.069	0	1.055	33.091	65.726	0.158	0.009	0	0.028	0.006	0	0.028	0	0	100.33
AM98-1-108	AM	sl	71	0.112	0.133	0	1.236	33.239	66.708	0.173	0	0	0	0	0.001	0	0.055	0	101.657
AM98-1-108	AM	sl	77	0.337	0.104	0	1.347	33.285	67.042	0.204	0.018	0.018	0	0	0	0	0.015	0.035	102.405
AM98-1-108	AM	sl	78	0.878	0.06	0.02	2.003	33.07	65.399	0.157	0.011	0.01	0.022	0.028	0.009	0.012	0	0	101.679
AM98-1-108	AM	sl	80	0.202	0.157	0	1.549	33.078	66.76	0.19	0	0.016	0.023	0.015	0.009	0.008	0	0	102.007
AM98-1-108	AM	sl	82	0.034	0.116	0.001	1.231	33.098	66.609	0.155	0.003	0.014	0.005	0	0	0	0	0.01	101.276
AM98-1-108	AM	sl	85	0.445	0.106	0	1.525	33.774	66.546	0.186	0.009	0.007	0	0	0.007	0	0.012	0	102.617
AM98-1-108	AM	sl	86	0.323	0.104	0	1.244	33.23	66.139	0.185	0	0	0.02	0.045	0	0.001	0.009	0	101.3
AM98-1-108	AM	sl	87	0.184	0.129	0.001	1.163	33.032	65.62	0.149	0.007	0.011	0.014	0	0.005	0.011	0	0	100.326
AM98-1-108	AM	sl	95	0.211	0.044	0	1.472	32.724	65.978	0.187	0	0	0	0	0.011	0	0.022	0	100.649
AM98-1-108	AM	sl	97	0.704	0.101	0	1.606	33.153	63.545	0.178	0	0.013	0.002	0	0	0	0	0	99.302
AM98-1-201	AM	sl	89	0.216	0	0	1.571	33.451	66.386	0.071	0	0.007	0	0.033	0.001	0.021	0	0	101.757
AM98-1-201	AM	sl	91	0.3	0.11	0.017	1.819	33.227	66.704	0.092	0	0.013	0.009	0	0	0	0	0	102.291
AM98-1-201	AM	sl	98	0.101	0.1	0.005	2.182	33.289	67.216	0.034	0	0.015	0.033	0	0.01	0	0	0	102.985
AM98-1-201	AM	sl	103	0.197	0.079	0.012	1.853	33.125	65.366	0.075	0	0.017	0.036	0	0.021	0	0.063	0	100.844
AM98-1-201	AM	sl	108	0.144	0.05	0	1.622	32.941	66.319	0.071	0	0	0.029	0.014	0	0	0.023	0	101.213
AM98-1-201	AM	sl	115	0.031	0.121	0.004	1.714	32.81	66.295	0.061	0	0.013	0.023	0.024	0.001	0.001	0.026	0	101.124
AM98-1-201	AM	sl	118	0	0.143	0	2.545	33.478	66.038	0.061	0.006	0	0	0.046	0	0.025	0.002	0	102.344
AM98-1-201	AM	sl	129	0	0.081	0	2.849	33.267	65.191	0.089	0	0.009	0	0.026	0.032	0.001	0	0	101.545
AM98-1-201	AM	sl	130	0	0.077	0.003	2.907	33.667	65.833	0.092	0.004	0	0.048	0.008	0.029	0.02	0	0	102.688
AM98-1-201	AM	sl	131	0	0.082	0	1.946	33.158	66.357	0.086	0.008	0	0.018	0.007	0.004	0.004	0.005	0	101.675
AM98-1-201	AM	sl	132	0.057	0.102	0.01	1.666	33.227	67.156	0.12	0	0	0.036	0	0	0.007	0	0	102.381
AM98-5-212	AM	sl	34	0.293	0.101	0	1.578	33.498	64.883	0.127	0.014	0.004	0	0	0	0	0	0	100.498
AM98-5-212	AM	sl	36	0.397	0.137	0	1.157	33.156	64.103	0.111	0	0	0.032	0.028	0	0	0.037	0	99.158
AM98-5-212	AM	sl	40	0.057	0.126	0.002	1.704	33.089	64.055	0.114	0.008	0.015	0.007	0	0	0	0	0	99.177
AM98-5-212	AM	sl	41	0.182	0.184	0.006	2.032	33.146	65.281	0.083	0.014	0.034	0.025	0.038	0	0.023	0	0	101.048
AM98-5-212	AM	sl	45	0.281	0.128	0.022	1.067	33.105	66.542	0.179	0.006	0	0	0.014	0.012	0	0	0	101.356
AM98-5-212	AM	sl	48	1.157	0.115	0	2.025	33.189	63.613	0.152	0.018	0	0.014	0.017	0.001	0.003	0.032	0	100.336
AM98-5-212	AM	sl	50	0.793	0.101	0	1.675	33.311	65.23	0.15	0	0.006	0	0.013	0	0	0.016	0	101.295
AM98-5-212	AM	sl	51	0.366	0.094	0.0													

Table 6 (continued). Complete electron microprobe analyses of sulfide minerals from the Bonnifield district, Alaska.

Sample	Deposit or Zone	Min.	Analysis No.	Cu	Pb	As	Fe	S	Zn	Cd	Se	Mn	Ag	Co	Sb	Ni	Hg	Sn	Total
DC97-36-190	DC South	sl	49	0.134	0.17	0	2.748	33.956	64.687	0.199	0	0.023	0.016	0	0.019	0	0	101.952	
DC97-36-190	DC South	sl	50	0.018	0.099	0.002	2.658	33.827	64.576	0.195	0	0.024	0	0	0.021	0	0	101.42	
DC97-36-190	DC South	sl	51	0	0.082	0	2.413	33.644	63.875	0.173	0	0.061	0.013	0.009	0	0.026	0	100.296	
DC97-36-190	DC South	sl	54	0.012	0.088	0.004	2.469	33.832	65.682	0.174	0	0.023	0	0	0	0	0	102.284	
DC97-36-190	DC South	sl	78	0	0.091	0	3.164	33.967	64.733	0.209	0.01	0.033	0.035	0	0.037	0	0	102.279	
DC97-36-190	DC South	sl	84	0	0.091	0	2.607	33.677	65.883	0.183	0	0.016	0	0.039	0.002	0	0	102.498	
DC97-36-190	DC South	sl	85	0	0.152	0.023	2.636	33.856	64.441	0.188	0.019	0.036	0.032	0	0.024	0	0	101.407	
DC97-36-190	DC South	sl	86	0.011	0.135	0	2.53	33.739	64.321	0.154	0.01	0	0	0	0	0	0	100.9	
DC97-36-190	DC South	sl	87	0	0.088	0.025	2.752	33.832	65.276	0.191	0	0.04	0.004	0	0.02	0	0	102.228	
DC97-36-190	DC South	sl	115	0	0.106	0.011	2.715	33.832	64.976	0.196	0	0.006	0.014	0	0.01	0	0	101.866	
DC97-36-190	DC South	sl	116	0.078	0.127	0	2.677	33.717	64.701	0.217	0	0.025	0	0	0	0	0	101.542	
DC97-36-190	DC South	sl	118	0	0.072	0.004	2.738	34.076	65.5	0.195	0	0.013	0.007	0	0	0.011	0	102.616	
DC97-36-190	DC South	sl	119	0	0.059	0	2.714	33.796	64.377	0.208	0.003	0.017	0.039	0	0.016	0	0	101.229	
DC97-36-190	DC South	sl	123	0.748	0.115	0	3.683	33.939	63.47	0.193	0.001	0.022	0	0	0	0.028	0	102.199	
DC97-36-190	DC South	sl	124	0	0.102	0	2.534	34.217	65.281	0.14	0	0.003	0.011	0.006	0.012	0	0	102.306	
DC97-36-190	DC South	sl	125	0.011	0.101	0.012	2.523	33.97	65.661	0.156	0.025	0.017	0.012	0	0	0.004	0	102.492	
DC97-36-190	DC South	sl	130	0.005	0.105	0	2.587	34.096	64.135	0.191	0.021	0.007	0.007	0.001	0.008	0	0	101.163	
DC97-36-190	DC South	sl	141	0	0.116	0.016	2.589	34.064	66.074	0.172	0	0.026	0	0.018	0.036	0	0	103.111	
DC97-36-190	DC South	sl	144	0	0.091	0	2.898	33.78	64.504	0.211	0	0.017	0	0	0	0	0	101.501	
DC97-36-190	DC South	sl	148	0	0.064	0	3.648	33.617	63.719	0.171	0.013	0.004	0.017	0.027	0	0	0	101.28	
DC97-36-190	DC South	sl	149	0	0.072	0	2.622	33.818	64.132	0.236	0.008	0.036	0.01	0.001	0	0	0	100.935	
DC97-9-170A	Discovery	sl	151	0	0.134	0.017	2.093	33.841	64.837	0.068	0.013	0.008	0.019	0	0	0	0	0	101.03
DC97-9-170A	Discovery	sl	152	0.024	0.102	0.021	1.838	33.96	65.355	0.059	0	0.026	0	0.031	0	0	0	0	101.416
DC97-9-170A	Discovery	sl	153	0.034	0.178	0	1.907	33.238	64.81	0.28	0.019	0.013	0.005	0	0	0	0	0	100.484
DC97-9-170A	Discovery	sl	158	0.01	0.076	0.021	1.537	34.322	67.04	0.044	0.022	0	0	0	0.007	0	0	0	103.079
DC97-9-170A	Discovery	sl	161	0.109	0.122	0	1.654	34.005	65.395	0.045	0	0.011	0	0	0	0.006	0	0	101.347
DC97-9-170A	Discovery	sl	164	0.071	0.123	0	1.547	33.859	65.269	0.066	0	0	0.05	0.004	0	0.029	0	0	101.018
DC97-9-170A	Discovery	sl	170	0	0.106	0	1.62	33.666	66.367	0.041	0.007	0.022	0	0.039	0	0	0	0	101.868
DC97-9-170A	Discovery	sl	171	0.029	0.158	0.013	1.665	33.702	67.559	0.042	0.002	0	0	0	0.009	0.014	0	0	103.193
DC97-9-170A	Discovery	sl	172	0.102	0.085	0	1.656	33.799	66.399	0.063	0.001	0.026	0.001	0.002	0.003	0.019	0	0	102.156
DC97-9-170A	Discovery	sl	177	0.093	0.133	0.011	2.117	33.756	65.983	0.102	0.012	0.008	0	0.018	0.002	0	0	0	102.235
DC98-38-208	Fosters	sl	123	0	0.115	0	1.628	34.042	64.873	0.179	0.01	0.038	0.052	0.018	0.032	0.001	0	0	100.988
DC98-38-208	Fosters	sl	132	0	0.122	0.001	1.903	34.323	64.982	0.155	0.021	0.058	0.016	0.001	0	0	0	0	101.582
DC98-38-208	Fosters	sl	133	0.005	0.027	0	1.777	33.913	65.045	0.115	0	0.024	0	0.005	0	0.02	0	0	100.931
DC98-38-208	Fosters	sl	134	0	0.14	0	1.891	34.007	65.643	0.095	0	0.021	0.029	0	0.011	0	0	0	101.837
DC98-38-208	Fosters	sl	135	0	0.084	0	1.803	33.877	65.067	0.16	0	0.052	0.03	0	0.01	0.01	0	0	101.093
DC98-38-208	Fosters	sl	144	0.039	0.078	0	1.843	34.219	64.692	0.151	0.001	0.022	0	0.009	0.008	0	0	0	101.062
DC98-38-208	Fosters	sl	145	0	0.086	0	1.885	33.866	64.165	0.137	0.011	0.027	0	0	0	0	0	0	100.177
DC98-38-208	Fosters	sl	148	0	0.141	0	1.785	33.9	66.113	0.153	0	0.051	0	0	0.01	0	0	0	102.153
DC98-38-208	Fosters	sl	149	0	0.098	0	1.727	34.532	65.324	0.129	0	0.034	0.028	0	0.003	0	0	0	101.875
DC98-38-208	Fosters	sl	153	0	0.119	0	1.984	33.877	65.114	0.119	0.003	0.069	0.014	0	0	0.004	0	0	101.303
DC98-38-208	Fosters	sl	158	0	0.057	0.019													

Table 6 (continued). Complete electron microprobe analyses of sulfide minerals from the Bonnifield district, Alaska.

Sample	Deposit or Zone	Min.	Analysis No.	Cu	Pb	As	Fe	S	Zn	Cd	Se	Mn	Ag	Co	Sb	Ni	Hg	Sn	Total
DC98-60-128.9	Fosters	sl	109	0	0.051	0.009	1.901	33.334	66.599	0.189	0	0.029	0.018	0	0	0.013	0	0	102.143
DC98-60-128.9	Fosters	sl	123	0.042	0.086	0	1.51	32.91	67.069	0.175	0	0.003	0	0.054	0.012	0	0	0.038	101.899
DC98-60-128.9	Fosters	sl	124	0	0.149	0	1.792	33.124	67.41	0.138	0	0.057	0	0.002	0	0.016	0	0	102.688
DC98-60-128.9	Fosters	sl	127	0	0.099	0.021	1.703	33.076	66.678	0.168	0	0.017	0.013	0	0	0.013	0	0	101.788
DC98-60-128.9	Fosters	sl	130	0	0.117	0	1.788	33.314	66.136	0.176	0.023	0.054	0	0	0.004	0.016	0	0.033	101.661
DC98-60-128.9	Fosters	sl	136	0.003	0.064	0.016	1.819	33.243	66.688	0.198	0	0.021	0	0.002	0	0	0	0.011	102.065
DC98-60-128.9	Fosters	sl	142	0	0.071	0	1.961	33.051	66.546	0.156	0.024	0.028	0	0	0	0	0.02	0	101.857
DC98-60-128.9	Fosters	sl	150	0	0.092	0	1.953	33.133	67.41	0.182	0	0.014	0.043	0.025	0	0	0	0.025	102.877
DC98-60-79	Fosters	sl	57	0	0.136	0	1.789	33.233	65.471	0.182	0	0.033	0	0.004	0.019	0.007	0.004	0.02	100.898
DC98-60-79	Fosters	sl	63	0.016	0.159	0	1.968	33.089	64.523	0.189	0.002	0.044	0	0	0	0	0	0	99.99
DC98-60-79	Fosters	sl	73	0.036	0.148	0	2.383	33.049	64.794	0.192	0	0.018	0	0	0.005	0.05	0	0	100.675
DC98-60-79	Fosters	sl	74	0	0.133	0	2.314	33.291	65.937	0.181	0	0.023	0	0	0.001	0	0	0.042	101.922
DC98-60-79	Fosters	sl	75	0.052	0.049	0	2.152	32.948	65.401	0.151	0	0.029	0.028	0	0	0	0.065	0	100.875
DC98-60-79	Fosters	sl	79	0	0.045	0	2.487	33.078	65.725	0.163	0.013	0.018	0	0.048	0	0	0	0	101.577
DC98-60-79	Fosters	sl	82	0	0.094	0.012	2.204	33.106	66.694	0.166	0	0.045	0	0.001	0.012	0.011	0	0	102.345
DC98-60-79	Fosters	sl	84	0	0.099	0	2.549	33.158	66.036	0.186	0.001	0.045	0.032	0	0.027	0	0	0.019	102.152
DC98-60-79	Fosters	sl	86	0	0.166	0	2.111	33.157	66.028	0.187	0	0.028	0.012	0	0	0	0	0.02	101.709
DC98-60-79	Fosters	sl	94	2.443	0.095	0	3.587	33.291	63.144	0.129	0	0.01	0.028	0.015	0	0	0	0	102.742
DC98-60-79	Fosters	sl	100	0.038	0.043	0	2.507	33.121	66.795	0.176	0.026	0.018	0.028	0	0.013	0	0	0	102.765
DC98-60-80	Fosters	sl	2	0	0.134	0	2.97	33.718	63.931	0.131	0	0.02	0	0.008	0.019	0.005	0	0	100.936
DC98-60-80	Fosters	sl	10	0	0.111	0	2.483	33.842	65.882	0.177	0.011	0.04	0	0.014	0.026	0	0	0	102.586
DC98-60-80	Fosters	sl	12	0	0.136	0.023	2.902	33.664	67.088	0.17	0	0.051	0	0.028	0	0	0	0	104.062
DC98-60-80	Fosters	sl	13	0.063	0.085	0	2.552	33.372	65.19	0.181	0.013	0.05	0	0.002	0.014	0.005	0	0	101.527
DC98-60-80	Fosters	sl	15	0.01	0.058	0	2.691	33.245	65.283	0.164	0	0.028	0	0.015	0.01	0.016	0	0.014	101.534
DC98-60-80	Fosters	sl	16	0.078	0.089	0.014	2.687	32.852	64.627	0.161	0.011	0.047	0	0	0	0	0	0	100.566
DC98-60-80	Fosters	sl	17	0	0.1	0	2.727	33.317	65.835	0.165	0	0.007	0	0.045	0	0	0	0.001	102.197
DC98-60-80	Fosters	sl	18	0	0.143	0	2.707	33.373	65.022	0.221	0	0.003	0	0	0.001	0	0.031	0.001	101.502
DC98-51-379	Lago	sl	36	0	0.101	0.016	2.206	33.704	65.192	0.172	0	0.045	0.027	0.01	0	0	0	0	101.473
DC98-51-379	Lago	sl	37	0.019	0.1	0	2.064	33.63	65.098	0.197	0.001	0.022	0.027	0	0	0	0	0	101.158
DC98-51-379	Lago	sl	39	0.007	0.065	0.005	1.907	33.669	66.026	0.197	0	0.022	0	0	0	0	0	0	101.898
DC98-51-379	Lago	sl	40	0	0.072	0	1.99	33.77	64.678	0.17	0	0.044	0	0	0	0	0	0	100.724
DC98-51-379	Lago	sl	44	0	0.113	0.005	2.355	34.074	65.222	0.192	0	0.047	0	0	0	0.006	0	0	102.014
DC98-51-379	Lago	sl	45	0	0.072	0	2.152	33.466	65.386	0.192	0.013	0.051	0.01	0	0	0	0	0	101.342
DC98-51-379	Lago	sl	46	0.063	0.047	0	1.834	33.667	65.931	0.215	0.013	0.069	0.002	0.049	0.019	0.011	0	0	101.92
DC98-51-379	Lago	sl	66	0.057	0.086	0	1.628	33.337	64.385	0.182	0.007	0.041	0	0	0.018	0	0	0	99.741
DC98-51-379	Lago	sl	67	0	0.143	0.002	2.09	33.624	65.876	0.21	0	0.056	0.008	0.025	0.011	0	0	0	102.045
DC98-51-379	Lago	sl	68	0	0.094	0	1.744	33.669	66.705	0.159	0	0.047	0	0	0.019	0.025	0	0	102.462
DC98-51-379	Lago	sl	73	0	0.13	0	1.975	34.479	66.503	0.188	0	0.056	0	0	0.024	0.014	0	0	103.369
DC98-51-379	Lago	sl	74	0	0.067	0.001	2.035	33.821	65.324	0.22	0.007	0.073	0.005	0	0.023	0	0	0	101.576
DC98-51-379	Lago	sl	76	0	0.088	0.004	1.743	33.793	65.439	0.153	0	0.04	0	0	0	0	0	0	101.26
DC98-51-379	Lago	sl	78	0	0.124	0	1.664	33.83	65.931	0.197	0	0.049	0	0.05	0	0.011			

Table 6 (continued). Complete electron microprobe analyses of sulfide minerals from the Bonnifield district, Alaska.

Sample	Deposit or Zone	Min.	Analysis No.	Cu	Pb	As	Fe	S	Zn	Cd	Se	Mn	Ag	Co	Sb	Ni	Hg	Sn	Total
97ADb58b	WTF	sl	41	0	0.122	0.001	4.809	33.051	62.376	0.227	0	0.072	0.017	0	0	0.015	0.012	100.702	
97ADb58b	WTF	sl	42	0.077	0.116	0	5.041	33.451	61.677	0.192	0.001	0.091	0.051	0	0	0.019	0	100.716	
97ADb58b	WTF	sl	43	0.032	0.108	0.004	5.139	33.36	62.353	0.225	0.009	0.082	0.028	0.029	0.024	0.001	0	101.394	
97ADb58b	WTF	sl	46	0.046	0.151	0	4.426	33.518	63.278	0.185	0	0.086	0	0	0.027	0.007	0	101.724	
97ADb58b	WTF	sl	48	0	0.115	0	4.519	32.997	61.916	0.217	0	0.038	0.04	0.01	0.014	0	0	99.866	
97ADb58b	WTF	sl	51	0	0.097	0	4.709	33.175	61.635	0.193	0.011	0.115	0.007	0	0.009	0	0	99.951	
97ADb58b	WTF	sl	54	0.037	0.114	0	5.214	33.209	61.27	0.229	0	0.108	0	0.046	0	0	0.007	100.234	
97ADb58b	WTF	sl	55	0.052	0.133	0	5.388	33.336	61.395	0.214	0.015	0.127	0.009	0	0.008	0	0	100.677	
97ADb58b	WTF	sl	62	0.013	0.071	0	5.239	33.389	60.91	0.212	0.019	0.089	0.041	0.062	0	0.007	0.01	100.062	
97ADb58b	WTF	sl	67	0	0.138	0	5.304	33.261	60.172	0.255	0.011	0.092	0	0	0.016	0	0	99.249	
97ADb58b	WTF	sl	74	0	0.125	0	4.596	33.287	63.406	0.256	0.008	0.078	0.006	0.018	0.005	0	0	101.785	
97ADb58b	WTF	sl	75	0	0.13	0	4.294	33.216	63.252	0.225	0.011	0.072	0.012	0.042	0.019	0	0	101.273	
97ADb58b	WTF	sl	76	0.05	0.072	0	4.417	33.052	62.438	0.245	0.009	0.072	0	0.012	0	0	0	100.367	
97ADb58b	WTF	sl	77	0	0.136	0	4.327	32.952	62.798	0.23	0	0.025	0	0	0	0	0.005	100.473	
97ADb58b	WTF	sl	82	0	0.048	0	4.309	32.975	62.688	0.222	0.006	0.065	0.034	0.019	0	0.027	0	100.393	
97ADb58b	WTF	sl	83	0	0.17	0	4.15	33.232	63.68	0.283	0.009	0.087	0.024	0.029	0.006	0	0	101.67	
97ADb58f	WTF	sl	28	0.01	0.092	0	4.826	33.52	62.677	0.218	0	0.071	0.03	0.008	0.004	0.013	0	0	101.469
97ADb58f	WTF	sl	29	0	0.127	0	4.481	33.261	63.076	0.25	0	0.095	0.068	0	0.008	0.005	0	0.004	101.375
97ADb58f	WTF	sl	30	0	0.092	0	4.645	33.091	62.263	0.225	0	0.107	0.004	0	0	0	0	100.427	
97ADb58f	WTF	sl	34	0	0.118	0	4.671	33.274	61.87	0.258	0	0.104	0.018	0.004	0.01	0.034	0.027	0	100.388
97ADb58f	WTF	sl	36	0.021	0.165	0	5.098	33.21	61.293	0.28	0.01	0.071	0.006	0	0	0.024	0	0.007	100.185
97ADb58f	WTF	sl	41	0	0.132	0.03	5.067	33.175	62.852	0.282	0	0.107	0.051	0	0.01	0	0	0	101.706
97ADb58f	WTF	sl	44	0	0.146	0	4.952	33.131	62.914	0.196	0.005	0.09	0	0.081	0.038	0.007	0	0	101.56
97ADb58f	WTF	sl	50	0.01	0.186	0	4.602	33.303	61.159	0.246	0	0.114	0	0	0	0	0	99.62	
97ADb58f	WTF	sl	51	0.032	0.144	0.01	4.644	32.758	61.924	0.256	0.017	0.098	0.024	0	0	0.009	0	0	99.916
97ADb58f	WTF	sl	55	0	0.148	0.003	4.911	33.174	62.06	0.256	0.001	0.097	0.038	0.038	0.006	0.006	0	0	100.738
97ADb58f	WTF	sl	56	0	0.177	0.015	4.98	33.337	60.496	0.26	0	0.121	0	0	0.008	0.017	0.001	0	99.412
97ADb58g	WTF	sl	84	0	0.036	0.003	5.456	33.36	61.819	0.241	0.013	0.057	0.048	0.039	0	0.003	0	0	101.075
97ADb58g	WTF	sl	86	0	0.128	0	4.976	33.289	61.044	0.261	0.016	0.104	0.004	0.003	0	0	0	0	99.825
97ADb58g	WTF	sl	87	0	0.058	0	5.088	33.489	62.147	0.257	0	0.087	0	0.048	0.008	0	0.015	0	101.197
97ADb58g	WTF	sl	92	0	0.175	0	4.951	33.103	61.714	0.169	0	0.078	0.006	0	0	0	0	0	100.196
97ADb58g	WTF	sl	98	0	0.073	0.023	5.499	33.278	62.095	0.253	0.009	0.095	0.012	0.025	0	0	0	0	101.362
97ADb58g	WTF	sl	100	0.074	0.169	0	5.41	33.028	61.24	0.241	0.012	0.07	0	0.018	0	0.025	0	0	100.287
97ADb58g	WTF	sl	103	0.058	0.139	0.01	5.629	32.975	60.661	0.268	0	0.095	0	0.011	0.005	0	0.058	0	99.909
97ADb58g	WTF	sl	108	0	0.087	0	5.18	33.371	61.89	0.241	0.005	0.055	0.018	0	0.018	0.004	0	0	100.869
97ADb58g	WTF	sl	111	0	0.09	0.005	5.525	33.361	61.199	0.268	0	0.113	0.001	0.008	0.001	0	0	0	100.571
97ADb58g	WTF	sl	116	0	0.074	0	5.053	33.228	61.734	0.231	0.013	0.095	0	0	0.013	0	0	0	100.441
97ADb58g	WTF	sl	117	0	0.126	0.024	5.245	33.345	62.024	0.23	0.007	0.076	0.061	0	0.009	0	0	0	101.147
97ADb58g	WTF	sl	120	0	0.153	0.017	5.557	32.869	61.4	0.216	0	0.09	0.035	0.023	0.007	0	0	0	100.367
DC97-9-170A	Discovery	td	36	23.203	0.142	0.179	3.653	23.241	2.927	0	0	0.005	22.893	0.022	27.11	0	0.037	103.412	
DC97-9-170A	Discovery	td	37	19.946	0.098	0.131	3.648	22.1	2.829	0	0	0	27.723	0.03	26.842	0	0	103.347	
DC97-9-170A	Discovery	td	38	21.366	0.204	0.179	3.637	22.											

Table 6 (continued). Complete electron microprobe analyses of sulfide minerals from the Bonnifield district, Alaska.

Sample	Deposit or Zone	Min.	Analysis No.	Cu	Pb	As	Fe	S	Zn	Cd	Se	Mn	Ag	Co	Sb	Ni	Hg	Sn	Total
DC98-38-208	Fosters	td	49	31.654	0.128	0.235	3.957	24.597	3.014	0.053	0.003	0	10.282	0	28.461	0	0.045	102.429	
DC98-38-208	Fosters	td	50	33.48	0.073	0.702	3.674	25.09	3.532	0.011	0	0	8.281	0.006	27.974	0	0.027	102.85	
DC98-38-208	Fosters	td	51	33.59	0.088	0.299	3.623	24.727	3.48	0.028	0	0.027	8.874	0	28.479	0.006	0	103.221	
DC98-38-208	Fosters	td	52	33.214	0.082	0.366	3.7	25.139	3.535	0	0	0.014	9.035	0.005	28.097	0	0.079	103.266	
DC98-38-208	Fosters	td	53	34.449	0.017	1.778	3.8	25.301	3.528	0.039	0	0.035	7.541	0.049	26.459	0	0	102.996	
DC98-38-208	Fosters	td	54	36.099	0.114	3.11	3.975	25.781	3.43	0	0	0.014	6.329	0.022	24.176	0	0	103.05	
DC98-38-208	Fosters	td	55	36.071	0.126	2.966	3.917	25.634	3.373	0.026	0	0.014	6.304	0.007	24.659	0	0.028	103.125	
DC98-38-208	Fosters	td	56	34.553	0.063	1.747	3.816	25.244	3.511	0	0	0	7.684	0	26.167	0	0.021	102.806	
DC98-38-208	Fosters	td	57	34.677	0.097	1.769	4.055	25.293	3.086	0	0	0.007	7.508	0	26.147	0	0.093	102.732	
DC98-38-208	Fosters	td	58	34.494	0.091	1.663	4.071	25.39	3.696	0.009	0	0.009	7.393	0.011	26.597	0	0	103.424	
DC98-38-208	Fosters	td	59	34.481	0.08	1.442	4.04	25.436	3.243	0	0	0.009	7.777	0	26.755	0	0.043	103.306	
DC98-38-208	Fosters	td	60	36.993	0	4.824	4.361	25.94	3.054	0	0	0.003	5.301	0.026	21.71	0.013	0	102.225	
DC98-38-208	Fosters	td	61	35.728	0.093	2.991	4.134	25.53	3.376	0	0	0.009	6.405	0.006	24.417	0	0	102.689	
DC98-38-208	Fosters	td	62	37.69	0.074	6.183	4.097	26.418	3.237	0	0	0	4.651	0	19.935	0	0	102.285	
DC98-38-208	Fosters	td	63	36.845	0.043	3.481	3.892	25.915	3.42	0	0.008	0	6.097	0.022	23.732	0	0.022	103.477	
DC98-38-208	Fosters	td	64	35.909	0.042	3.521	4.079	25.698	3.451	0	0	0.001	6.349	0.007	23.96	0	0.017	103.034	
DC98-38-208	Fosters	td	65	36.391	0.069	3.383	3.918	25.724	3.35	0	0	0	6.298	0	23.925	0	0	103.058	
DC98-38-208	Fosters	td	66	34.629	0.096	1.575	3.877	25.372	4.201	0	0	0.007	7.958	0.002	26.487	0.023	0.006	104.233	
DC98-38-208	Fosters	td	67	37.347	0.012	5.225	4.287	26.159	3.181	0.031	0	0.011	5.121	0.013	21.381	0	0.026	102.794	
DC98-60-79	Fosters	td	59	39.384	0.104	1.344	3.499	25.609	4.084	0	0	0.008	0.703	0	24.832	0	0	99.622	
DC98-60-79	Fosters	td	61	39.59	0.057	1.335	3.517	25.775	3.748	0	0	0.004	0.726	0	22.145	0	0.005	97.056	
DC98-60-79	Fosters	td	66	38.597	0.094	1.252	3.377	25.492	3.617	0.002	0	0	0.623	0	24.79	0	0.037	97.99	
DC98-60-79	Fosters	td	69	39.809	0.061	1.077	3.514	25.776	3.873	0.015	0	0.014	0.683	0.082	23.897	0	0.003	98.887	
DC98-60-79	Fosters	td	77	39.356	0.07	1.099	3.54	25.726	3.761	0	0	0.013	0.693	0.013	29.303	0	0	103.653	
DC98-60-79	Fosters	td	83	39.719	0.042	1.097	3.46	25.72	4.402	0.03	0	0.036	0.667	0.017	25.914	0	0	101.196	
DC98-60-79	Fosters	td	93	40.184	0.093	1.087	3.557	25.614	3.936	0.025	0	0.014	0.691	0.005	29.686	0.032	0.017	104.987	
DC98-60-79	Fosters	td	98	39.882	0.064	0.975	3.626	25.905	4.068	0	0	0.031	0.722	0.011	25.848	0	0	101.217	

Table 7. Trace-element contents of pyrite and sphalerite by laser ablation–inductively coupled–mass spectrometry analysis from the Bonnifield district, Alaska.

[Zone and deposit abbreviations as in Supplementary Data Table 5; py = pyrite; sp = sphalerite. Analyses made by Alan E. Koenig and Nora K. Foley. Analytical methods described in Appendix. Sample locations shown on Sample Location Map. All contents are in parts per million. Blank cells indicate less than the reporting limit. Dash symbol for Fe indicates Fe is not reported; Fe was used as the internal standard element for concentration calculations]

Sample	Deposit or Zone	Min.	Anal No.	V	Mn	Fe	Co	As	Se	Ag	Au	Hg	Tl	Ni	Cu	Ga
Reporting limit				0.227	0.458	10.5	0.104	0.826	1.60	0.100	0.101	0.865	0.0296	0.654	0.329	0.0947
97ADb58b	WTF	py	28	3.50	45.5	-	6.48	727	4.71	13.3	1.55	6.49	0.179		2173	0.120
97ADb58b	WTF	py	29		4.44	-		843		4.12	0.140	2.75		2.04	46.0	
97ADb58b	WTF	py	30	2.37	103	-	14.7	869	9.54	13.7	1.21	4.30	0.181	4.65	2297	
97ADb58b	WTF	py	31	0.860	17.0	-	11.2	911	2.33	18.1	0.145	3.62	0.0736	2.46	78.8	
97ADb58b	WTF	py	32	0.953	34	-	37.4	1677		7.92	1.08	4.97	0.110		122	0.103
97ADb58b	WTF	py	46		1.12	-	0.296	1094	2.52	8.90	0.516	6.95		1.38	372	0.186
97ADb58b	WTF	py	47		3.12	-	0.248	2010	13.6	7.37	0.644	3.75	0.129	4.31	469	0.171
97ADb58b	WTF	py	48	4.39	59.8	-	6.77	340	29.4	3.43		7.95	0.213	37.1	171	0.507
97ADb58b	WTF	py	50	1.72	5.23	-	2.20	151	17.6	1.11		6.45	0.0632	36.0	15.1	0.360
97ADb58b	WTF	py	51		1.95	-	0.216	153	5.86	4.07		8.27		4.20	257	
97ADb58b	WTF	py	52	3.27	33.9	-	1.06	2787	5.14	7.82	1.67	6.83	0.337	3.68	182	0.530
97ADb58b	WTF	py	53	1.97	85.8	-		5032	14.2	19.1	0.896	9.9	12.4	9.66	193	0.132
97ADb58b	WTF	py	56	1.34	4.09	-	0.444	1761		1.35	0.460	4.93	0.054	8.25	677	0.245
97ADb58b	WTF	py	57	0.559	11.9	-	4.24	976	3.91	8.71	0.558	2.83	0.277	17.9	2867	
97ADb58b	WTF	py	58	0.510	8.78	-	4.23	723	6.79	1.98	0.254	3.11	0.257	19.4	195	
97ADb65b	AM	py	65	1.38	799	-		3359			0.223	5.53	153	1.05	3.88	
97ADb65b	AM	py	66	14.3	1534	-	38.8	5055	232	444	2.81	262	1148	514	3294	21.4
97ADb65b	AM	py	67	40.9	148	-	21.2	5119	556	472	3.62	66.5	781	662	16740	6.02
97ADb65b	AM	py	68		407	-	1.34	6862	80.1	82.1	0.646	21.1	556	58.7	8402	1.78
97ADb65b	AM	py	69	1.38	415	-	0.488	5595		0.866	0.391	22.6	343	28.9	22.8	
97ADb65b	AM	py	70	1.77	782	-	8.30	4084	91.9	141	1.94	12.0	398	528	3887	0.612
AM98-1-201	AM	py	71	14.4	56.2	-	64.5	1393	18.4	75.9	1.24	9.6	6.18	117	25273	4.01
AM98-1-201	AM	py	72	16.2	64.2	-	48.9	866	22.2	41.1	1.29	7.69	11.2	111	5107	11.2
AM98-1-201	AM	py	73	0.507	63.8	-	1.39	5188		0.805	0.211	7.31	17.8	5.70	26.8	0.104
AM98-1-201	AM	py	74	18.0	3.24	-	50.1	53	18.6	13.8	0.381	6.65	0.748	13.9	515	0.572
AM98-1-201	AM	py	75	3.21	910	-	10.4	7926	2.62	13.9	1.15	35.1	822	77.9	404	
AM98-1-201	AM	py	76	17.4	76.9	-	20.0	358	4.92	125	0.269	14.7	4.01	40.8	2379	10.7
AM98-1-201	AM	py	77	1.12	330	-	4.14	12086	1.90	3.64	0.970	45.8	781	14.3	113	
AM98-1-201	AM	py	78		124	-	3.92	7064		7.18	0.394	4.27	0.294	5.07	147	
AM98-1-201	AM	py	79	47.5	16.7	-	27.9	221	12.4	24.8	0.269	2.17	1.430	36.2	5471	0.527
AM98-1-201	AM	py	80	54.9	12.3	-	43.9	305	29.3	34.3		1.31	0.939	31.4	2594	0.153

Table 7 (continued). Trace-element contents of pyrite and sphalerite by laser ablation–inductively coupled–mass spectrometry analysis from the Bonnfield district, Alaska.

Sample	Deposit or Zone	Min.	Anal No.	V	Mn	Fe	Co	As	Se	Ag	Au	Hg	Tl	Ni	Cu	Ga	
Reporting limit				0.227	0.458	10.5	0.104	0.826	1.60	0.100	0.101	0.865	0.0296	0.654	0.329	0.0947	
DC97-36-190	DC South	py	81	0.932	-	44.2	5.26					2.09				82.9	
DC97-36-190	DC South	py	82	0.379	2.21	-	4.58	31.5			0.403			1.93		449	
DC97-36-190	DC South	py	83	0.992	-	0.351	9.66		0.200	0.133	1.05	0.0489	1.09		7.23		
DC97-36-190	DC South	py	84	5.56	-	1.78	60.4	2.03			2.70			0.923	400		
DC97-36-190	DC South	py	85	0.385	4.03	-	29.1	47.4	0.58	0.183	4.39				288	0.459	
DC97-36-190	DC South	py	86	0.694	-	17.2	5.12	134		0.156				0.758	1.21	0.102	
DC97-36-190	DC South	py	87	-	18.5	33.0	168				1.40				4.51		
DC97-36-190	DC South	py	89	0.281	-	1.31	130	1.16	0.220	1.34	0.0405	0.902		646	0.433		
DC97-36-190	DC South	py	90	1.03	-	12.1	53.9	112	1.48	0.109	2.64	0.153	2.69		289	0.483	
DC97-36-190	DC South	py	91	0.418	-	1.88	20.2	266	1.85			0.0738	2.47		540	0.106	
DC97-36-190	DC South	py	6	-	8.91	147	16.2	0.683				0.125				337	
DC97-36-190	DC South	py	7	0.489	-	2.40	2.46	0.299			2.77			1.30		37.3	0.265
DC97-36-190	DC South	py	8	4.75	-	48.6	38.9		0.572	0.227	1.12	0.0418	0.970			71.1	
DC97-36-190	DC South	py	11	0.537	0.80	-	205	77.6	158	1.98		2.79				371	
DC97-36-190	DC South	py	12	0.494	-	8.24	481		0.614	0.351	1.99	0.0762	1.14			69.1	
DC97-36-190	DC South	py	13	2.76	-	240	31.5	62.9	0.200	0.104	2.23	0.0329				6.21	
DC97-36-190	DC South	py	17	0.361	-	13.6	2.74	9.92	0.138			2.12				2.60	
DC97-36-190	DC South	py	18	6.38	-	100	6.33	156			4.27	0.0557				2.26	
DC97-36-190	DC South	py	19	-	16.4	1.22	45.6	0.561					0.750			71.0	
DC97-36-190	DC South	py	20	0.698	-	5.15	15.8	9.70		0.232	0.90	0.0570	1.27			65.0	
DC97-36-190	DC South	py	21	7.93	-	4.84	71.0	30.2	177		2.67	0.121	1.26			95.4	
DC97-36-190	DC South	py	22	1.02	-	326		1.14	0.133		0.0839	1.09		45.3	0.335		
DC97-36-190	DC South	py	23	-	281	5.8	2.98			1.01	0.0521	1.74				46.1	
DC97-36-190	DC South	py	24	1.11	-	76.7	207									1.53	
DC97-36-190	DC South	py	25	0.854	-	101	57.7	30.5		0.0990	2.38	0.0729				1.30	
DC97-36-190	DC South	py	26	-	54.3	162					0.0565			2.22	0.206		
DC98-60-128	Fosters	py	27	-	0.205	87.8		0.251			1.54	0.0509				258	
DC98-60-128	Fosters	py	28	0.911	-	15.3	2.70	0.286	0.233	1.30						178	
DC98-60-128	Fosters	py	29	6.28	-	0.354	705		1.81	0.585	1.44	0.0581			48.8	0.327	
DC98-60-128	Fosters	py	32	10.7	-	0.512	416		0.747	0.307		0.207				69.7	
DC98-60-128	Fosters	py	37	9.88	-	517			0.866	1.38	0.0537				35.8	0.558	
DC98-60-128	Fosters	py	38	1.41	-	355			0.342	1.98					4.95	0.126	
DC98-60-128	Fosters	py	41	0.858	11.5	-	0.417	55.2	8.99			0.489				275	
DC98-60-128	Fosters	py	42	-	0.223	307		0.541	0.666		0.0748					94.4	
DC98-60-128	Fosters	py	43	0.398	1.36	-	841			0.995						5.83	

Table 7 (continued). Trace-element contents of pyrite and sphalerite by laser ablation–inductively coupled–mass spectrometry analysis from the Bonnifield district, Alaska.

Sample	Deposit or Zone	Min.	Anal No.	V	Mn	Fe	Co	As	Se	Ag	Au	Hg	Tl	Ni	Cu	Ga
Reporting limit				0.227	0.458	10.5	0.104	0.826	1.60	0.100	0.101	0.865	0.0296	0.654	0.329	0.0947
DC98-60-128	Fosters	py	44			-		73.4		2.87	0.225	1.91		1.17	1092	
DC98-60-128	Fosters	py	45		1.43	-		195	2.93			1.49	0.0406		20.6	
DC98-60-128	Fosters	py	46		4.34	-	0.980	387		1.58	0.273	1.84	0.532		35.7	0.256
DC98-60-128	Fosters	py	47	0.330	3.22	-	0.212	58.1		0.208	0.293	1.60		1.69	16.6	0.0986
DC98-60-128	Fosters	py	48		4.36	-	0.543	204		0.438				1.09	24.7	
DC98-60-128	Fosters	py	60		1.37	-		625		2.62	0.122	1.31			10.8	0.450
DC98-60-128	Fosters	py	61		4.58	-	1.49	180	3.32	2.32	0.417		0.0881	2.17	79.1	0.198
DC98-60-128	Fosters	py	67	0.357	121	-	2.79	478		3.06	0.526	2.37	15.5	2.34	222	0.148
DC98-60-128	Fosters	py	68	0.309	50.4	-	1.89	270		1.31	0.467		5.14		1801	0.438
DC98-60-128	Fosters	py	70		3.49	-		1077	1.98	1.25	1.32				62.5	
DC98-60-128	Fosters	py	71		5.53	-		3.00					0.0634		38.5	
DC98-60-128	Fosters	py	72	0.334	0.958	-		233			0.161		0.181	1.65	121	0.251
DC98-60-128	Fosters	py	73		15.4	-		961		6.33	0.467		8.10		172	0.607
97ADb58b	WTF	sp	39		649	41765			34.6	19.0	0.795	70.8	0.293		22.6	
97ADb58b	WTF	sp	49	1.41	598	41147	0.780		16.7	10.1	0.474	73.5	0.226	3.76	9.72	
97ADb58b	WTF	sp	42	1.24	644	67084	32.0	11.2	14.0	13.3	0.118	45.0	0.0434		13.6	
97ADb58b	WTF	sp	43	8.12	767	58526	2.22	15.8		15.1	0.173	43.0		1.20	18.9	0.803
97ADb58b	WTF	sp	44	4.13	700	46181	1.12		33.0	12.9	0.106	41.3		78.7	0.477	
97ADb58b	WTF	sp	45	4.14	579	67436	0.626	34.4		14.7		54.3	0.285	1.79	13.5	0.183
97ADb65b	AM	sp	92	0.281	27.9	31981	0.217		37.9	17.1	0.340	184	0.0287		120	32.7
97ADb65b	AM	sp	9	0.273	33.7	33987	0.445			18.0	0.112	189	0.0742		99.3	31.4
97ADb65b	AM	sp	10	2.69	30.5	33610				15.6	0.758	200	0.515		2401	37.0
97ADb65b	AM	sp	14	0.486	28.9	40360	0.824	16.0	11.1	24.3		177	0.298	1.36	96.1	32.4
97ADb65b	AM	sp	15		12.9	31442		2.73	34.1	17.4		146	0.0374		811	35.9
AM98-1-201	AM	sp	16	0.509	42.2	32952	0.390		18.9	13.3		261	0.124		545	18.9
AM98-1-201	AM	sp	40	6.70	38.2	29535		3.19		7.62		198	0.0444	2.56	322	24.2
AM98-1-201	AM	sp	49		46.7	32283	0.387			8.59	0.211	206	0.128	1.60	273	16.9
AM98-1-201	AM	sp	50	1.30	35.5	31243	0.490		19.8	17.6		203	0.356		89.1	21.0
AM98-1-201	AM	sp	51		50.8	46273	0.299	20.1		15.3		156	1.16	5.95	157	21.1
AM98-1-201	AM	sp	52	3.77	35.0	42401	4.29	108	41.2	61.4	0.167	170	3.81	3.03	701	23.0
AM98-1-201	AM	sp	53	57.5	34.3	43432			46.1	33.8	1.15	701	0.142	1.3	8042	69.4
AM98-1-201	AM	sp	54	14.2	58.8	30773	0.475	218		22.3	0.392	677	0.340		2425	16.6
AM98-1-201	AM	sp	55		69.4	60936	18.5	138	23.7	34.1	0.372	835	0.513		8217	20.1
AM98-1-201	AM	sp	56		29.7	29501			72.1	48.6	0.358	262			1692	15.2
AM98-1-201	AM	sp	57	0.924	51.6	29014	2.01	6.42		12.5		314		3.35	640	51.3

Table 7 (continued). Trace-element contents of pyrite and sphalerite by laser ablation–inductively coupled–mass spectrometry analysis from the Bonnifield district, Alaska.

Sample	Deposit or Zone	Min.	Anal No.	V	Mn	Fe	Co	As	Se	Ag	Au	Hg	Tl	Ni	Cu	Ga
Reporting limit				0.227	0.458	10.5	0.104	0.826	1.60	0.100	0.101	0.865	0.0296	0.654	0.329	0.0947
AM98-1-201	AM	sp	58	5.23	25.2	30642	0.682			10.2		268	0.0902		163	25.8
DC97-36-190	DC South	sp	59	1.20	213	132451	10.8	241	302	24.4	1.37	171	0.298		83.3	
DC98-60-128	Fosters	sp	62		468	58877	1.27	169		7.54	1.70	196	1.16	16.4	91.3	133
DC98-60-128	Fosters	sp	63		223	37788	1.53	94.9	31.4	15.2	0.836	134		7.58	84.6	51.3
DC98-60-128	Fosters	sp	64	2.20	244	82350		20.1		6.19	0.843	50.8	0.946		451	15.6
DC98-60-128	Fosters	sp	65		293	28460	1.09	44.8		40.5		60.5	0.393		304	9.23
DC98-60-128	Fosters	sp	66		351	93867		87.9		4.29		132	0.462	5.03	158	175

Table 7 (continued). Trace-element contents of pyrite and sphalerite by laser ablation–inductively coupled–mass spectrometry analysis from the Bonnifield district, Alaska.

Sample	Deposit or Zone	Min.	Anal No.	Ge	Mo	Cd	In	Sn	Te	Hg	Tl	Bi
Reporting limit				2.60	0.234	0.563	0.0280	0.559	1.40	0.865	0.0296	0.0285
97ADb58b	WTF	py	28		0.745	0.0582			6.49	0.179		
97ADb58b	WTF	py	29					2.78	2.75			
97ADb58b	WTF	py	30			121	0.245	0.798		4.30	0.181	0.158
97ADb58b	WTF	py	31	3.09			0.0294			3.62	0.0736	
97ADb58b	WTF	py	32	6.46		82.6	0.186	0.806	3.41	4.97	0.110	
97ADb58b	WTF	py	46	5.39	0.505					6.95		
97ADb58b	WTF	py	47	6.52		1.24		0.780		3.75	0.129	
97ADb58b	WTF	py	48	5.09	1.29	5.93	0.213			7.95	0.213	
97ADb58b	WTF	py	50	6.22		1.22		0.586		6.45	0.0632	0.0663
97ADb58b	WTF	py	51	8.22	0.810					8.27		
97ADb58b	WTF	py	52	4.62		11.3				6.83	0.337	0.0603
97ADb58b	WTF	py	53	3.39				0.663		9.94	12.4	0.224
97ADb58b	WTF	py	56	4.08		1.07				4.93	0.0538	0.273
97ADb58b	WTF	py	57		11.6	0.698		1.24		2.83	0.277	0.467
97ADb58b	WTF	py	58	2.94	2.58	1.83				3.11	0.257	0.133
97ADb65b	AM	py	65	3.05	6.74			0.853		2.09	153	
97ADb65b	AM	py	66	6.78	183		5.05	20.9			1148	190
97ADb65b	AM	py	67		2336		0.988	88.9		1.05	781	509
97ADb65b	AM	py	68		10.9	3.51	0.173	13.2		2.70	556	110
97ADb65b	AM	py	69	3.77	14.2	1.89				4.39	343	0.0727
97ADb65b	AM	py	70	3.10	12.7		0.156	30.6			398	79.4
AM98-1-201	AM	py	71	3.35	9.32	13.2	24.9	5355		9.57	6.18	113
AM98-1-201	AM	py	72	3.02	13.9	8.43	0.546	60.4		7.69	11.2	99.7
AM98-1-201	AM	py	73	3.03	2.41	4.30				7.31	17.8	0.400
AM98-1-201	AM	py	74		24.8		0.0526	5.36		6.65	0.748	18.5
AM98-1-201	AM	py	75		11.3	0.612		1.84		35.1	822	2.07
AM98-1-201	AM	py	76	4.82	28.1	29.0	0.400	17.7		14.7	4.01	44.7
AM98-1-201	AM	py	77		12.0	1.09		3.81		45.8	781	12.5
AM98-1-201	AM	py	78	2.96		2.82		2.23		4.27	0.294	0.932
AM98-1-201	AM	py	79		52.9		0.0822	8.61		2.17	1.43	35.9
AM98-1-201	AM	py	80		60.1		0.1847	18.8		1.31	0.939	70.2

Table 7 (continued). Trace-element contents of pyrite and sphalerite by laser ablation–inductively coupled–mass spectrometry analysis from the Bonnifield district, Alaska.

Sample	Deposit or Zone	Min.	Anal No.	Ge	Mo	Cd	In	Sn	Te	Hg	Tl	Bi
Reporting limit				2.60	0.234	0.563	0.0280	0.559	1.40	0.865	0.0296	0.0285
DC97-36-190	DC South	py	81				0.0670	0.849		2.09		
DC97-36-190	DC South	py	82	3.78	0.387			3.82			0.271	
DC97-36-190	DC South	py	83				0.391	1.30		1.05	0.0489	0.0422
DC97-36-190	DC South	py	84	4.59		3.51	17.3	20.4		2.70		0.265
DC97-36-190	DC South	py	85			1.89	3.54	6.67		4.39		0.0291
DC97-36-190	DC South	py	86	3.26	0.709							0.961
DC97-36-190	DC South	py	87		0.396		0.0874	0.739		1.40		0.118
DC97-36-190	DC South	py	89	3.07	0.293	6.53	7.38	208	2.33	1.34	0.0405	3.00
DC97-36-190	DC South	py	90		0.342	1.41	0.674	3.98		2.64	0.153	10.6
DC97-36-190	DC South	py	91	9.59		0.757	11.8	74.7			0.0738	32.0
DC97-36-190	DC South	py	6	4.71		0.808		1.31	1.43		0.125	0.219
DC97-36-190	DC South	py	7	5.34		6.13	0.281	19.0		2.77		4.75
DC97-36-190	DC South	py	8	3.60		40.2	0.272	1.64		1.12	0.0418	0.427
DC97-36-190	DC South	py	11	6.77	9.80		0.0629			2.79		7.59
DC97-36-190	DC South	py	12	3.80	2.88		0.0694	1.06		1.99	0.0762	1.51
DC97-36-190	DC South	py	13	7.51	2.40		0.0608	1.39		2.23	0.0329	2.57
DC97-36-190	DC South	py	17	5.38			0.0363			2.12		0.180
DC97-36-190	DC South	py	18	10.9	0.290			1.10		4.27	0.0557	11.5
DC97-36-190	DC South	py	19	11.9	0.351	1.30			3.04			3.51
DC97-36-190	DC South	py	20	6.84			0.0306	0.915		0.904	0.0570	0.126
DC97-36-190	DC South	py	21	10.4	0.667	1.38		1.43		2.67	0.121	391
DC97-36-190	DC South	py	22	5.13	5.44		0.0453	2.44			0.0839	0.120
DC97-36-190	DC South	py	23	8.93	0.543			2.24		1.01	0.0521	0.356
DC97-36-190	DC South	py	24	12.8	1.99							1.91
DC97-36-190	DC South	py	25	7.98			0.0337	1.07		2.38	0.0729	0.0582
DC97-36-190	DC South	py	26	7.52		2.18	0.0365				0.0565	0.0839
DC98-60-128	Fosters	py	27	2.93	0.667	0.941				1.54	0.0509	0.0381
DC98-60-128	Fosters	py	28							1.30		
DC98-60-128	Fosters	py	29			0.709	0.0591	0.864		1.44	0.0581	0.129
DC98-60-128	Fosters	py	32						3.73		0.207	
DC98-60-128	Fosters	py	37	2.82	0.464	1.99				1.38	0.0537	
DC98-60-128	Fosters	py	38			6.25				1.98		
DC98-60-128	Fosters	py	41				0.0469				0.489	0.136
DC98-60-128	Fosters	py	42	2.88	0.480			0.950			0.0748	0.0641
DC98-60-128	Fosters	py	43					1.41				

Table 7 (continued). Trace-element contents of pyrite and sphalerite by laser ablation–inductively coupled–mass spectrometry analysis from the Bonnifield district, Alaska.

Sample	Deposit or Zone	Min.	Anal No.	Ge	Mo	Cd	In	Sn	Te	Hg	Tl	Bi
Reporting limit				2.60	0.234	0.563	0.0280	0.559	1.40	0.865	0.0296	0.0285
DC98-60-128	Fosters	py	44				3.80	11.8	3.24	1.91		
DC98-60-128	Fosters	py	45							1.49	0.0406	0.0462
DC98-60-128	Fosters	py	46		9.43	1.66			4.47	1.84	0.532	0.0916
DC98-60-128	Fosters	py	47					1.08		1.60		0.0814
DC98-60-128	Fosters	py	48		2.55			1.83				0.0666
DC98-60-128	Fosters	py	60			8.20	0.0725			1.31		
DC98-60-128	Fosters	py	61		2.96		0.107	1.54			0.0881	0.296
DC98-60-128	Fosters	py	67		68.2		0.132	24.7		2.37	15.5	0.235
DC98-60-128	Fosters	py	68		41.5		0.229	31.5			5.14	0.198
DC98-60-128	Fosters	py	70				0.0627					
DC98-60-128	Fosters	py	71	3.97						0.0634	0.0918	
DC98-60-128	Fosters	py	72	4.10	0.698	3.27					0.181	
DC98-60-128	Fosters	py	73	3.34							8.10	
97ADb58b	WTF	sp	39		2.94	2699	3.40	3.76		70.8	0.293	0.0722
97ADb58b	WTF	sp	49		6.95	2931	5.85	5.24		73.5	0.226	0.0504
97ADb58b	WTF	sp	42	2.91	1.09	2767	4.68	0.757		45.0	0.043	0.0882
97ADb58b	WTF	sp	43		3.78	2739	4.21	1.22		43.0		0.0755
97ADb58b	WTF	sp	44		2.71	2727	4.44	2.52		41.3		0.0598
97ADb58b	WTF	sp	45	2.70	1.41	2653	3.53	3.54	2.38	54.3	0.285	
97ADb65b	AM	sp	92	3.79	0.43	1724	13.9	10.9	10.6	184	0.0287	0.0611
97ADb65b	AM	sp	9		2.33	1744	12.4	16.9		189	0.0742	0.0818
97ADb65b	AM	sp	10			1900	9.28	24.3	9.69	200	0.515	0.498
97ADb65b	AM	sp	14		1.50	1672	11.2	29.7		177	0.298	1.31
97ADb65b	AM	sp	15		27.8	1569	11.0	14.3		146	0.0374	1.05
AM98-1-201	AM	sp	16		3.87	1822	102	612		261	0.124	2.54
AM98-1-201	AM	sp	40		8.53	1677	25.5	11.5		198	0.0444	3.08
AM98-1-201	AM	sp	49		6.85	1818	28.1	8.34	3.45	206	0.128	0.806
AM98-1-201	AM	sp	50	6.02	2.68	1762	30.0	13.9		203	0.356	21.3
AM98-1-201	AM	sp	51		3.31	1673	27.8	154		156	1.157	20.9
AM98-1-201	AM	sp	52		13.3	1708	46.9	4237		170	3.812	159
AM98-1-201	AM	sp	53		5.73	2234	240	4023		701	0.142	36.1
AM98-1-201	AM	sp	54			2310	160	20.8	5.33	677	0.340	4.39
AM98-1-201	AM	sp	55		21.3	1499	199	31.0		835	0.513	11.9
AM98-1-201	AM	sp	56		2.76	1947	108	16.3		262		93.7
AM98-1-201	AM	sp	57		8.22	1760	92.8	45.7	1.73	314		4.19

Table 7 (continued). Trace-element contents of pyrite and sphalerite by laser ablation–inductively coupled–mass spectrometry analysis from the Bonnifield district, Alaska.

Sample	Deposit or Zone	Min.	Anal No.	Ge	Mo	Cd	In	Sn	Te	Hg	Tl	Bi
Reporting limit				2.60	0.234	0.563	0.0280	0.559	1.40	0.865	0.0296	0.0285
AM98-1-201	AM	sp	58	7.29	7.80	1907	113	12.1		268	0.0902	0.875
DC97-36-190	DC South	sp	59	10.5		2273	51.8	330	5.22	171	0.298	37.3
DC98-60-128	Fosters	sp	62	6.54		2093	10.2	75.2	8.10	196	1.161	0.179
DC98-60-128	Fosters	sp	63	6.50		1290	12.7	33.0	20.4	134		0.621
DC98-60-128	Fosters	sp	64			1411	7.55	16.4	14.7	50.8	0.946	
DC98-60-128	Fosters	sp	65			1440	14.0	39.9	4.73	60.5	0.393	
DC98-60-128	Fosters	sp	66	3.59		2275	15.2	70.8		132	0.462	0.0317